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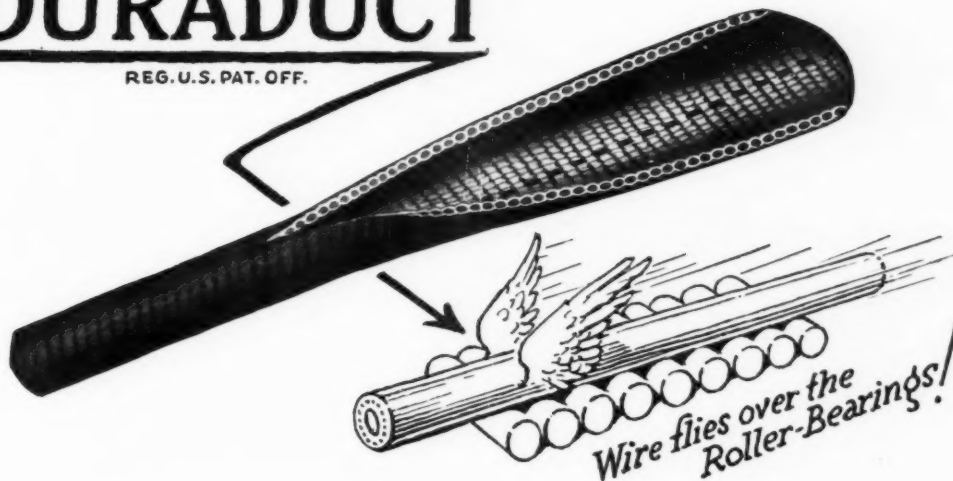
Vol. 23, No. 5

Official Journal of ASSOCIATION OF ELECTRAGISTS—International

MARCH, 1924

DURADUCT

REG. U.S. PAT. OFF.



*Wire flies over the
Roller-Bearings!*

That's why Contractors prefer

The Original SINGLE WALL Non-Metallic Conduit

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Tubular Woven Fabric Co., Pawtucket, R. I.



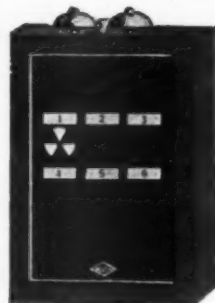
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Surface Type
Metal-Black-Gravity-Cat. No. 373
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Surface Lamp Type
Surface Wood-Lamp
1 1/4-inch Units
Cat. No. 457



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When requirements call for a *good* Annunciator at a *low price* you can do no better than to furnish DEVEAU Gravity Drop Annunciator.

First class construction throughout and exceptionally well finished—furnished with standard markings numbered from 1 up.

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DeVeau Circle Push
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Removable Weighted Felt-Covered
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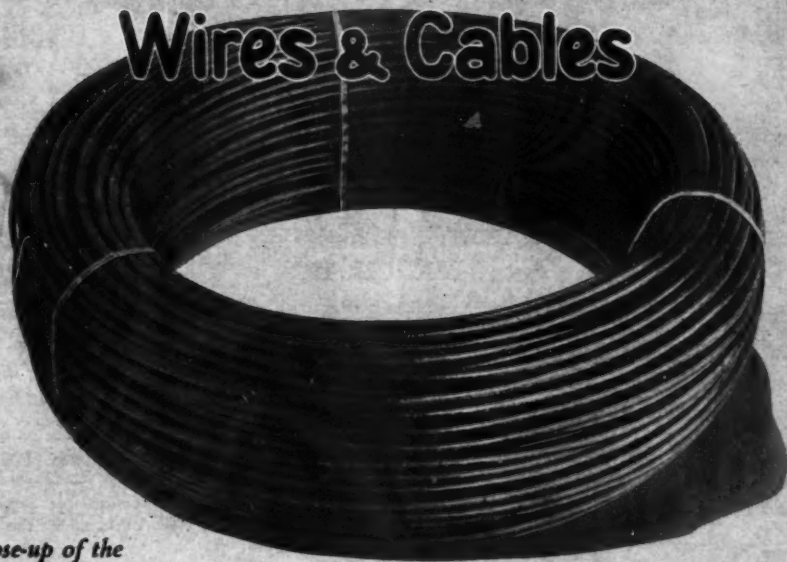
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One of the reasons for the outstanding quality of "U. S." PARACORE Wires and Cables can be summed up in two words —good insulation.

The efficiency of any wire is in direct proportion to the quality of its insulation. The better the insulation the better the wire is a fact that all buyers of wire recognize.

Such careful attention has been paid to the insulation of, "U. S." PARACORE that today it is of a quality that is approached by but few manufacturers.

Use "U. S." PARACORE for work that requires wire of the *better* kind.

United States Rubber Company



ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

The Electragist

(Trade Mark Reg. U. S. Pat. Omce.)

The Official Journal Published Monthly
By the Association of Electragists—International.

FARQUSON JOHNSON
Editor and Business Manager

CLEVELAND OFFICE:
H. W. Booth, 781 The Arcade

JAY S. TUTHILL
Associate Editor

Volume 23

MARCH, 1924

No. 5

TO OUR READERS

All matter for publication must be in the hands of the Editor by the 10th of the month preceding publication.

All changes in our mailing list should be received by us two weeks prior to date of publication of the issue with which the change is to take effect.

TO OUR ADVERTISERS

Changes in advertisements and all advertising copy should reach our office not later than the TENTH OF THE MONTH previous to the date of issue.

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The Big Smooth Raceway

of SAYLORDUCT is proving a money-making time saver on many wiring contracts. Fishing is sometimes a difficult job, but close weaving of SAYLORDUCT makes an inside surface, smooth, seamless and without lining. There

is nothing to pull loose and obstruct the free passage of the wire. When you buy loom, see that you get SAYLORDUCT.

You'll know it by the famous DUCK trade-mark.



The
SAYLOR ELECTRIC
& MFG. CO.

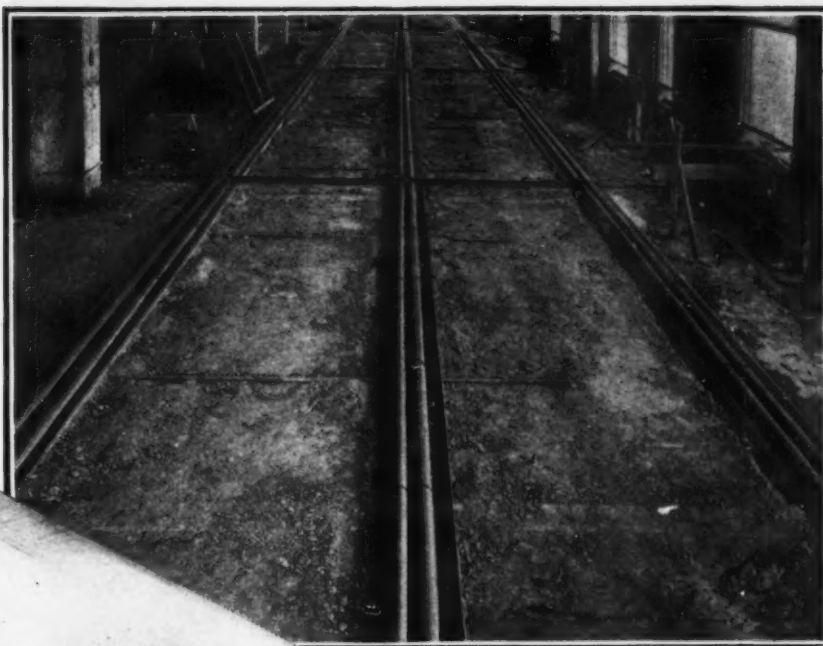
Wheeling, W. Va.

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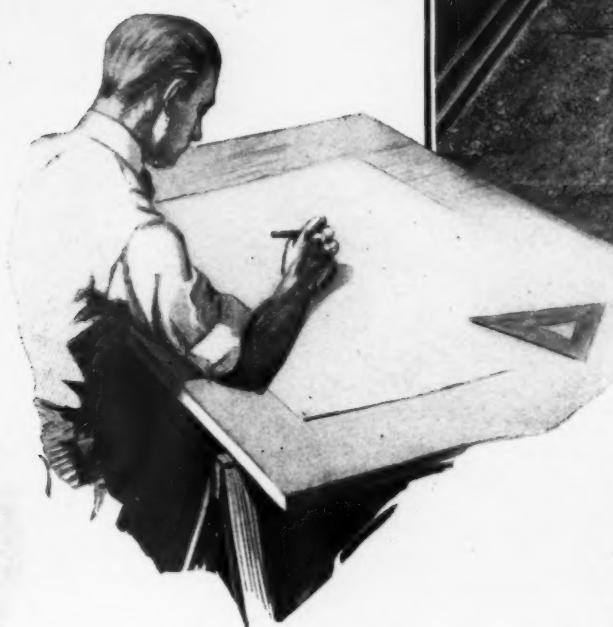
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Patent
app. for

UNDERFLOOR DUCT SYSTEM



*Orangeburg Underfloor Duct System
before floor is laid. Edison Building,
Brooklyn, New York*



—takes the guesswork out of wiring layouts

WITH ordinary wiring methods, the most carefully planned office or loft building wiring often quickly becomes obsolete through rearrangement of equipment or the demands of new tenants. Expensive and unsightly patching out of the old system is then necessary to meet the new needs.

The Orangeburg Underfloor Duct System is always up-to-date. The grid of duct imbedded in the floor permits the installation of new outlets anywhere in a few minutes. New wiring can be fished through for any service without trouble.

This takes the guesswork out of wiring layouts. An Orangeburg layout is as permanently satisfactory as the building itself because it provides for unforeseeable requirements.

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The KEY SOCKET of the INDUSTRY

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No. 10 — Single-Pole, 250 Watts, 250 Volts. Fits all
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Superior Workmanship

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"Notice the Lighting Equipment"



"A Superior Wiring Device for every Electrical Need"

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149 New Montgomery St.

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

No One expects the safety signal in the Fifth Avenue traffic tower to go wrong

The design and construction is such that it cannot go wrong.

IT IS SAFE!

It is not the shape of the tower that makes the operating safe, and it is not the design of the box or the method of operation that makes the switch safe. It is the skill in design and construction in assembling of the switch that is in the box that makes the switch safe. Box of course must be safe, but the switch inside the box does the job.

Our switches are tested and inspected not only by our own corps of inspectors, but under the supervision of the Underwriters' Inspection Service. A man each week looks over some part of the Trumbull line and is liable to test any switch in the place to see how it stands up.

Bear in mind that few manufacturers have this Underwriters' Weekly Inspection Service.

The TRUMBULL line does not receive its approval from one first sample, but its line is tested each week. We are the first to want to know of any fault.

Safety—Convenience—Economy

THIS IS THE TRUMBULL MESSAGE

The Trumbull Electric Mfg. Co.

Plainville, Conn.

NEW YORK
114 Liberty St.

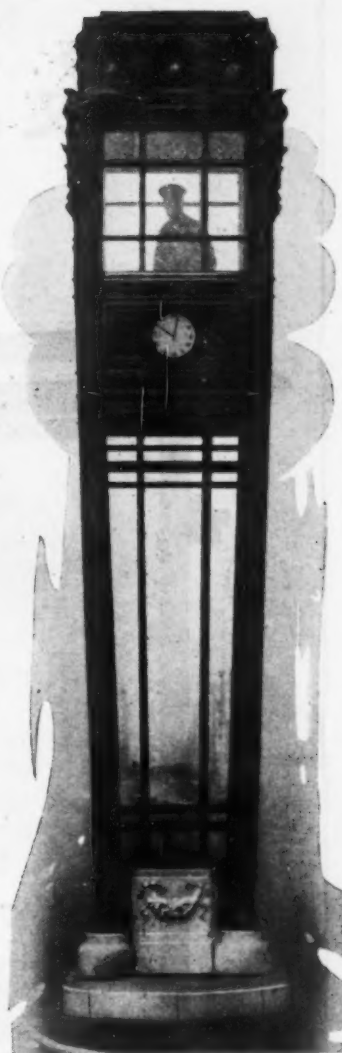
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P & S Wiring Devices

For Amusement Parks



P&S 61971



P&S 50715

50715 Pony Porcelain Receptacles.
80 Weatherproof Porcelain Socket.

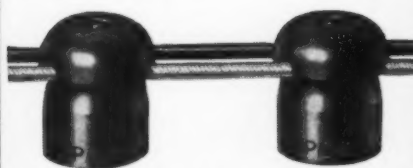


P&S 464

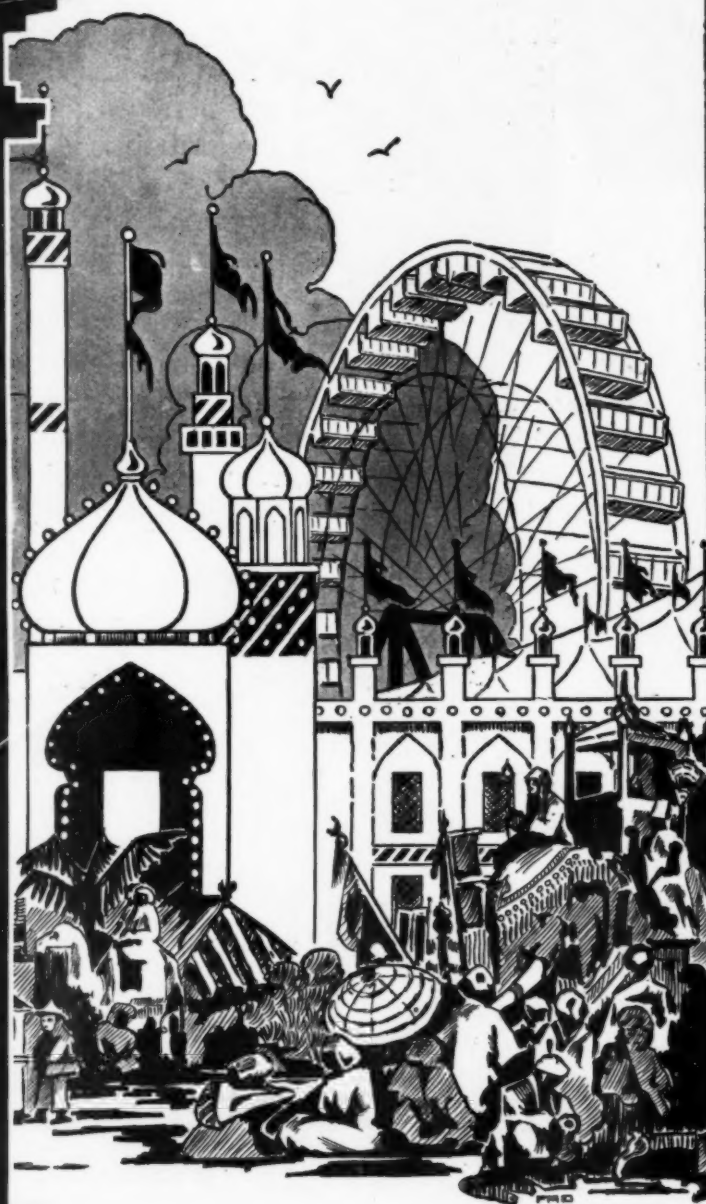
464 Mica Temporary Decorative Socket.
61417 Porcelain Temporary Decorative Socket.



P&S 80



P&S 220 Cold Molded Socket Streamers — Wires Soldered. Ask for Samples.



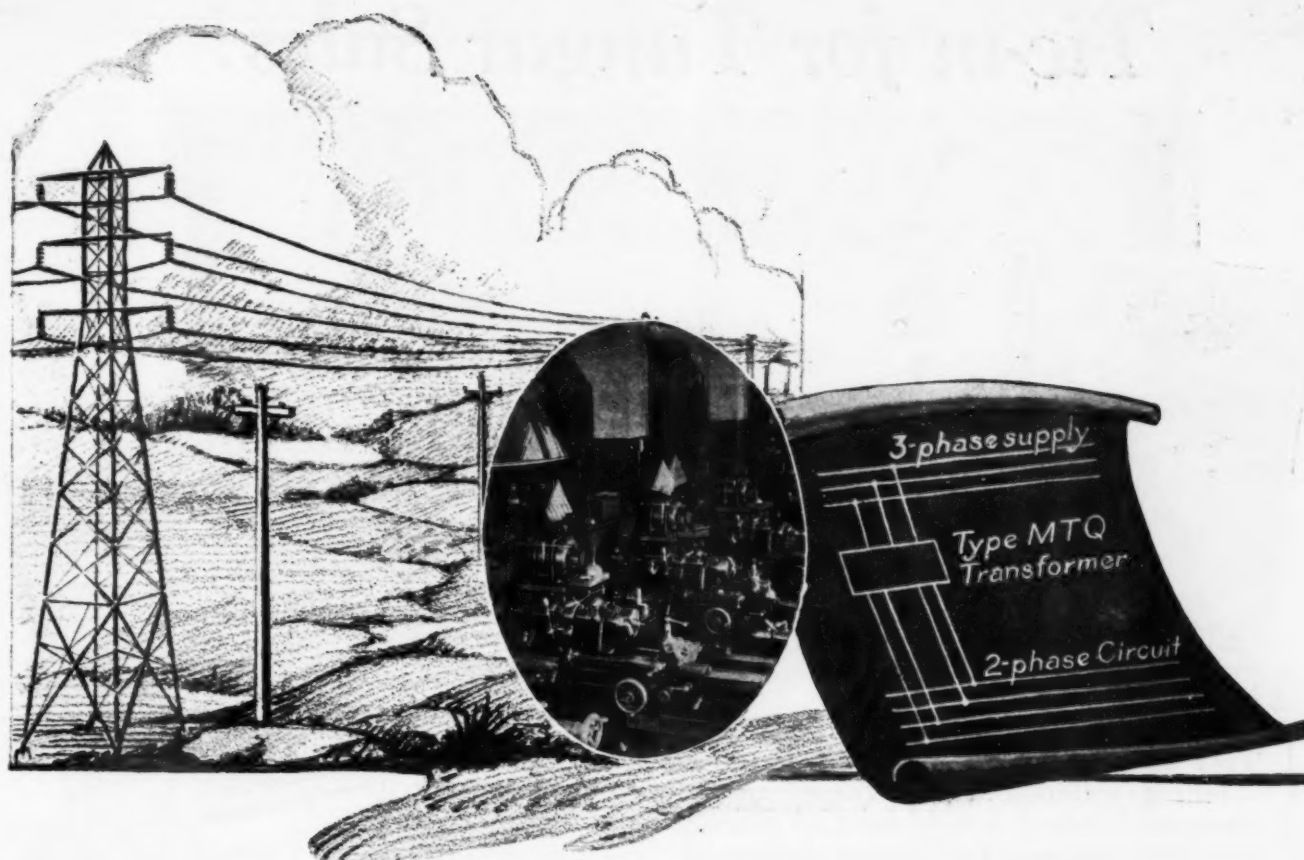
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Pass & Seymour, Inc.

Solvay
Station

Syracuse, N. Y.

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST



If Your Power System Changes from 2-Phase to 3-Phase—

Then 2-phase motors will have to be adapted to the new system—an opportunity for contractors to sell and install many MTQ Auto Transformers (3-phase—2-phase).

MTQ Auto Transformers readily adapt 2-phase motors in service, or which it may be desired to put in service later, to the 3-phase system. The change of phases to suit the motors can be accomplished easily and economically with a suitable MTQ Auto Transformer. The reverse is true as well, i.e., a 3-phase motor, by means of the MTQ Auto Transformer, may be adapted to a 2-phase system.

MTQ Auto Transformers are standardized in sizes from 1 to 25 kv-a. 3-wire and 4-wire. They can be furnished with conduit fittings, if desired. No oil is used for either cooling or insulating purposes.

G-E Sales Offices have further information.

Ask for Descriptive Sheet 65105.

General Electric Company
Schenectady, N. Y.



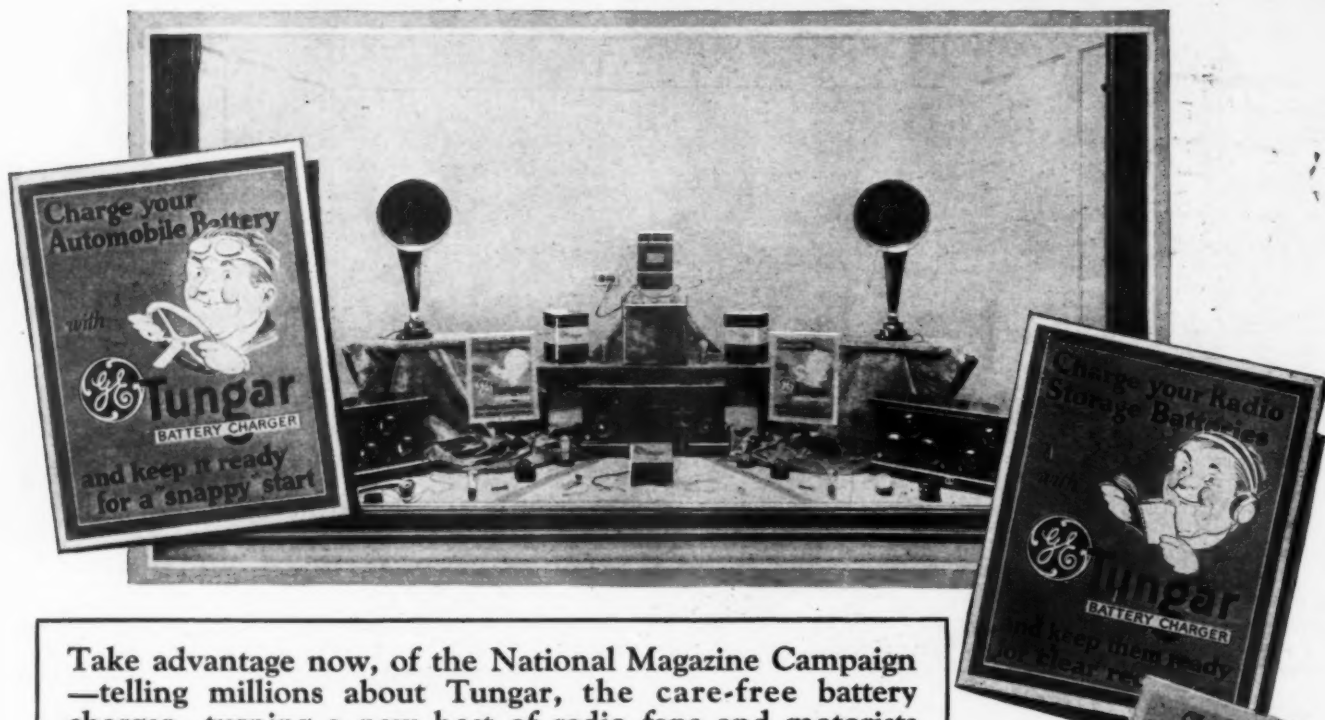
MTQ Auto Transformer

GENERAL ELECTRIC

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

E3A-1M

Tie-in for Tungar Sales!



Take advantage now, of the National Magazine Campaign—telling millions about Tungar, the care-free battery charger—turning a new host of radio fans and motorists into live prospects for Tungar dealers.

Get these Tungar Sales-makers from your G-E Distributor

Prepare now to tie-in for sales by displaying Tungar in your windows.

Get the complete outfit of Tungar sales-makers and window trimming suggestions from your G-E Distributor.

Put in your window the large window cards that say Tungar to every motorist or radio fan who passes.

Put the Tungar Band around the Tungar. It makes a real display in window and on counter.

Mail out the Radio Folder and the Auto Booklet—hand them out over the counter—enclose them in packages.

Run newspaper advertising electros of Tungar to let your public know that your store is Tungar headquarters.

Now is the time for big sales.

Merchandise Department
General Electric Company
Bridgeport, Connecticut



MERCHANDISE DEPARTMENT
GENERAL ELECTRIC

The Electragist

Official Journal of the
Association of Electragists—International

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Volume 23

MARCH, 1924

No. 5

Here's Some Good Reading for You:

Debunking the Building Contract is what Charles L. Eidlitz called his picturesque talk at the Building Conference meeting in New York City. As usual, he hit them right in the eye, and everybody that has anything to do with building contracts will read this article with interest as well as whole hearted enjoyment.

Attractions at 1924 Convention. This year the Association of Electragists will hold its annual convention with "Business and Pleasure Happily Combined", as the slogan goes, out near the center of population. Some of the numerous attractions in and out and around the convention hotel are noted on another page.

Eastern Division Convention. Another convention, that of the Eastern Division of the A. E. I., will be held in New York City this month—March 18—the day following the midyear meeting of the Association's Executive Committee. "Everybody Welcome", the advance notices say.

That Novelized Play. The second installment of Do It Electrically is published this month, and unlike the usual second act, it fairly sputters with dramatic action. You're out of luck if you don't read this storyized comedy drama.

Organization Activities. Every electragist should read this department monthly. It's the news of the associations—and would be still more newsy if members would take time—with a pencil and sheet of paper—to jot down past and future events and send them to the editor. It's so easy to do and it's easily overlooked.

Read This Issue and You'll Read Future Ones

Published Monthly—Established in 1901

Publication Office: 100 Liberty St., Utica, N. Y. Editorial and Business Office: 15 W. 37th St., New York City

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Personal Views of the Editor

In a two page circular letter recently sent out on the subject of salesmanship, there is one sentence that stands out as clear as the sun on a crisp winter morning. Read it and think it over: "There is too much telling the world and not enough selling the individual". Read it again and give it more serious thought. It's a sermon in a nutshell. While it was written to fit general business, none other is so in need of it as the electrical business.

From the manufacturer of electrical equipment down to the girl behind the counter, they all do more *telling* than *selling*. They tell you to the minutest detail about the raw materials used in the manufacture of an electric appliance, but they rarely refer to the convenience afforded by its use. They try to sell a machine rather than a comforting help to mother. The physical aspects are talked about rather than the satisfaction it affords. They exhibit the *seen* instead of the *unseen*.

Perhaps scientific salesmanship, as it is called, has led us into too much talk of technicalities. But the average buyer doesn't care about the internal arrangements of a heating pad, so long as he can be assured that it will warm up that cold spot in the vicinity of his solar plexus when it is needed.

Safe and serviceable are useful terms to employ when selling electrical appliances and devices. Then tell how they assure comfort, convenience and satisfaction, and you sell what the public needs. Sell enough individuals on these facts and they'll tell the world.

* * *

At one of the company's sales conferences, George P. Flading, representing the Trumbull people in New York City, spoke on "Coöperation", and though the subject seems to be threadbare, G. P. said some things that are worthy of repeating. To illustrate one point, he told of his first engagement as purchasing agent with Wm. E. Robertson's company in Buffalo, N. Y. He admits that he was a rotten purchasing agent, as he expresses it. Being a deep student of human nature, Robertson

recognized this fact too, but instead of firing this young man whose efforts were misapplied, thus unloading on the community another nonproducer, W. E. did a stunt in coöperation in seeing that the energy of his inefficient purchasing agent was directed toward more profitable work. Flading's words of wisdom continue:

"When we look at a large modern hospital, even if we have no religion at all, we contribute to its support because we wish to have such a place to go to in case we should be unfortunate enough to require its services, and because we know that the eradication and cure of disease insures to those we love, a happier and longer life.

"Great libraries, art galleries, public parks and playgrounds, schools, hospitals for the insane, etc., all are the practical result of the coöperative idea. There is nothing sentimental about it. Self preservation is the driving cause.

"Some of us are financiers, others are well versed on the handling of credit, some are packers, some are designing engineers, some handle correspondence, others figure costs—even the window washer has his part, as dirty windows indicate to the practiced eye the general morale of the institution.

"When Robertson told me I was a rotten purchasing agent, he did me a great favor, for otherwise I would probably still bear the same reputation—in plain words, a failure".

If that isn't true talk on coöperation, I never heard anything worthy of the term. How many of us "coöperate with", which is coöperation, instead of "operate against", which is disastrous competition—misdirected energy!

* * *

So far nobody seems to be displeased with the appearance of the February issue of this magazine. On the other hand, quite a number of readers have been so thoughtful as to send to the editor their kind expressions of appreciation. Sincere thanks are hereby extended. Appreciation is one thing that encourages improvement.—F. J.

Do It Electrically-II

By THOMAS F. CHANTLER

Play Written by S. E. D. Staff Member and Produced at Last Annual
A. E. I. Convention by Washington Electrical People, Herein Novelized

When Carvel Blake left Burchard Stover's law office he realized himself to be face to face with the crisis of his life. At one moment he was resolved to achieve success at any price; the next, accepting Stover's estimate of him as being just about what he deserved. Alternating thus twixt courage and despair he returned to the humble home of the Blake Electric Company. Mildred Everton was there conversing animatedly with Dora Prentiss, his bookkeeper and assistant in the store. Somewhat to his surprise he found himself addressing her very formally. "Good afternoon, Miss Everton," he said stiffly. Then he turned at once to Dora Prentiss and requested her to get Mrs. Jelray on the telephone.

Shocked by this sudden change in his demeanor but too proud to inquire the reason, she followed his cue instinctively, explaining the motive for her visit briefly. Her voice sounded forced and seemed to be coming from a long ways off. "My uncle, Washington Emery, just arrived from New York. He arranged with your father to meet him here to discuss a business matter. Uncle has been delayed at the bank. Please tell your father, should he arrive first, that uncle will be here shortly."

Regretting his boorishness, but too stubbornly set in his own mood to alleviate the girl's distress by making amends, he mumbled a brief excuse as he stepped to the phone to talk with Mrs. Jelray. He would show Mildred Everton that he could contrive to do business in spite of her lawyer friend. Making a violent effort to speak cheerily, he informed Mrs. Jelray of his interview with Stover, assuring her that she would find his estimate very low for the high quality of work he planned upon doing. Intrigued by his mention of Stover's name the girl made slow work of departing. "Too late!" she heard him exclaim. "Stover gave the job to Dugan!" he repeated incredulously. "Very well. Good bye." He rubbed his forehead as though relieving the efforts of a blow, then turned and looked squarely at Mildred. "I'll give my father your message," he said coldly.

"I can't really believe that Burchard Stover would do a thing like that," she declared wonderingly, too concerned to care that her comment betrayed that she had been listening. "Why, I went to school with him," she innocently announced, as though that fact was final.

Resisting the impulse that had been nagging him ever since his interview with the lawyer, he nervously paced the length of the store and back before replying. "There were girls who went to school with Benedict Arnold too," he blurted out savagely, his masculine sense of logic outraged by her assumption that Burchard Stover's character was unassailable because of her having attended school with him. He paced back and forth again heavily and then dead stopped, staring at her dully, his thoughts racing to a decision of the question uppermost in his mind. She watched him silently, too shocked by his last remark to even attempt a reply. "There must be some business that's run on the level and I'm going to find it," he asserted in the virtuous manner of one who feels himself abused. He felt vaguely grateful to her for having precipitated that decision and waited expectantly for her approval.

She regarded him wonderingly for a moment as though doubting the evidence of her ears. That the man who risked his life to rescue a girl from drowning should later refuse to risk time and effort to pull his business out of a rut was baffling to her. "You can't run away from your mistakes like that," she declared with an air of conviction that impressed him in spite of himself. "A man's mistakes are part of himself, like a fever or the blues; he must correct them where he finds them. That's what my uncle, Washington Emery, says. Don't you see?" she hurried on encouragingly moving closer to him and placing her hand on his arm beseechingly. "You started here in Tryville; so you must fight it out here until you have succeeded in this business. You must 'Do It Electrically,' she decreed oracularly. "That's it—'Do it Electrically! You must!'"

"Thank you, Miss Mildred," boomed a great voice behind them. "That was well said." Carvel Blake, Sr. had entered so quietly that his presence had gone unnoted until he spoke. Stockily built and unbroken by years of toil in making his farming operations successful, his steady grey eyes speaking eloquent-



Letting a Prospect Demonstrate an Appliance as Best She Could, While He Recorded an Account Payable—as Did a Similar Character in This Westinghouse Lamp Company Picture—Was Only One of Blake's Many Trade Faults

ly of his gratitude, he surveyed the girl appreciatingly. So completely had he surprised them that neither could find words with which to greet him. Mildred, genuinely fond of him, smiled a welcome; but his son was plainly disconcerted. His father had been dissatisfied for a long time with the way he had been doing, he realized full well. Intuitively he understood that it was his own confession of his desires to get into another business that had brought the flush of shame to the old man's smoothly shaven face, and the knowledge somehow made him resentful. His attitude was wholly defensive, as though the two before him were bent upon hampering, rather than helping him.

"My son," counselled his father, his voice fraught with emotion that he made no effort to conceal, "it's a poor man who unhitches in the middle of a furrow. The Blakes go through to the end. I've been watchin' you, boy, prayin' for you, too," he said earnestly, "and I wish I could help you. But I can't; nobody can. It's inside of yourself that things are wrong and you've got to set 'em straight yourself, just as Miss Mildred said. This," he said emphatically, taking in the store with a gesture, "is your furrow, and you've got to go through to the end. 'Do It Electrically.' You must," he ended simply, in the manner of one expressing an obvious truth.

What Carvel Blake, Jr. might have said in reply must go unreported, for at that moment the door opened briskly to admit one who was to play the most important part of all in helping him win Dame Fortune's favor. Washington Emery walked, acted and talked as one long accustomed to having his own way. Somewhat younger than Blake, Sr., of medium height and lithely muscular, expensively and quietly appareled; closely cropped brown hair, broad forehead, bushy brows shielding piercing blue eyes, and a generous mouth masquerading under a bristly brown mustache that hid its unturned corners—he was the very embodiment of crisp aggressiveness and great driving force tempered by diplomacy and good humor.

Greeting the Blakes briskly and Mildred with an affectionate pat on the shoulder, Washington Emery plunged at once into a description of a project he had for making bricks in anticipation of a local building boon. "You own some fine deposits of brick clay," he told the elder Blake, "I'll put up the

money for the necessary machinery. Tryville is going to——" He looked at young Dora Prentiss and then pointedly at Blake, indicating his wish not to talk before the girl.

"Well, as I was saying," resumed Emery, when Dora, acting upon Blake's suggestion had promptly responded to the suggestion that she go home early. "Tryville is shortly to have improved railroad and shipping facilities. Factories will come and people will follow; there will be building, lots of it. Bricks will be needed and we'll get the business, never fear. Your son," turning invitingly to Young Blake, "can make a big place for himself in the enterprise. Sounds promising, doesn't it?" he ended, beaming upon them all engagingly.

"Sounds good to me," enthused young Blake, to his father's evident chagrin. "Takes more than a pair of pliers and an old straw hat to get into that business," he declared with satisfaction, his thoughts busy with the inroads that Dugan and other price cutters had made upon his business.

Plainly distressed, the elder Blake set shrewdly to work to maneuver his son into a position where conditions would force him to act in a manner more befitting a Blake. Disgressing from the subject of bricks, he led Emery into giving a sketchy account of his first business venture in New York.

"I bought a team and a wagon and

went into the trucking business," Emery explained. "Got this scar," touching his head, "teaching another fellow not to go to my customers and cut prices. But I kept plugging. Today the business is incorporated and there are five hundred people on the payroll. Had a hell of a time making that venture profitable, but I did it," he said modestly.

With a sidelong glance at Mildred, old man Blake blandly inquired of Emery why he had not solved his difficulties by selling out and trying something else. "Hell, no!" exploded Emery. "The one time when a man cannot afford to sell out is when his business is on the rocks; he gets only a knock-down price for the equipment and stock. He losses all the money the business owes him. That's no time to quit," he declared emphatically quite unconscious of how he was playing into the shrewd old farmer's hands.

But Washington Emery was not the one to be turned aside from his objective; he adroitly steered the talk back to the subject of bricks, stressing again the opportunity there would be for young Blake and offering to coach him. Mildred's air of dissatisfaction made no impression upon him for he was giving all his attention to observing young Blake's reactions. And young Carvel Blake was all for deserting the electrical field and undertaking the manufacture of bricks.

Mortified beyond endurance by his son's weakness, the old man turned



Although Still Unappreciative of the Value of a Tidy Store, Carvel Blake Had Learned That Proper Accounting is a Vital Factor Contributing to Success—Scene From the Popular Electrical Motion Picture "Show 'Em How"

upon him angrily, telling him in the strongest language he had ever used in talking with him, that he regarded him as a quitter and a weakling. "As there's a God in heaven," he declared savagely, "I'm ashamed of you." Then he turned to Emery. "You said yourself that the one time when a man can't afford to sell out is when his business is on the rocks. Yet here is this boy of mine wanting to do just that. The first Blake I ever heard of who left his plow in the middle of a furrow. I don't know what to make of him. I'm ashamed of him, Emery, before God I am." He turned away to hide his emotions, his great hands opening and closing convulsively.

Stung to the quick by the rebuke which he honestly felt to be unmerited, young Blake launched into a graphic recital of his interview with Stover. Standing where he could observe Mildred, he told how the lawyer had threatened to boycott his business, how he had allowed him to depart under the impression that he stood a fair chance of securing the order that had taken him to the lawyer's office. "I hadn't been out of the office five minutes," he blurted out wrathfully, "before he had given the business to a curbstoner, Dugan. I'm sick of the whole rotten mess," he declared virtuously, "and I'm going to get into something where I can get ahead faster."

Without a word, her disappointment made eloquent even by her walk, Mildred Everton went quietly to the door and departed. Humbly he realized that his action in deserting the electrical field was subject to less favorable interpretation than he had put upon it. But his father was addressing Emery and the importance of what he was saying aroused in him feelings of mingled gratitude and regret; the significance of Mildred's sudden departure was something he would have to think about later.

"Emery," the old man was saying earnestly, "I don't want to be unfair to my own boy. I'm a farmer, not a business man. We're in your hands. If you think he ought to quit the electrical business and go to making bricks, all right. Then we'll set him to making bricks. What do you say?" he ended frankly, his very manner indicating that he trusted Emery's judgment implicitly.

Not relishing the responsibility he was being asked to assume, Emery paced back and forth several times before

replying. Then he walked up to young Blake and studied him intently. "Carvel, do you really want my advice?" he asked simply.

His feelings still quivering from the lash of Mildred Everton's pitying glance, Carvel Blake was quite willing to admit his need to be advised. He had followed the dictates of his own conscience to the end where he now stood; he realized that the others, being in disagreement with him were probably right for that reason. "Yes, Mr. Emery, I do," he answered humbly. "I've made a mess of things, I guess," he said sadly.

Probing into his affairs with questions that cut to the very roots, Washington Emery soon had the business turned inside out, as it were, and all its weaknesses laid bare. The faulty bookkeeping, the excessive amount of outstanding money, the burdensome load of bills payable, the neglect to benefit by concentrating the buying, the lack of merchandising experience, the indifference to the great helps to be derived through systematic perusal of the trade journals—all were located by Emery and held up accusingly. Carvel Blake was glad now, glad from the bottom of his heart that Mildred Everton was not present to witness this unmasking of his fine pretenses, although in justice it must be said that he had not until that moment realized the great number and seriousness of his shortcomings. He realized for the first time

that the hardships and misfortunes which he had been so insistently accusing others of causing him in his business were in reality the outcome of his own incompetence and ignorance of business practices.

"Blake," his advisor told him finally, "I can't tell you whether you should remain in the electrical business or get out of the electrical business."

"I thought surely you'd be able to advise him, Emery," ejaculated old man Blake in great surprise. "You're the best business man I know, and if you can't tell Carvel whether to get out of this business or not, who can?" he demanded in great perplexity.

"That's just the point, Blake. You see, he really hasn't been in the electrical business at all, not as I understand that word 'business', he hasn't."

"This is a poor time to make jokes, Emery," the old man said sharply.

"I'm serious, all right," declared Emery reassuringly. "A kid who crawls through a hole in the fence doesn't belong on the big team, does he?" he asked persuasively, seeking to dispel the puzzled look with which the Blakes had received his verdict. "He can catch a little and know something of baseball, but he has a long way to go before he can make a place for himself on the team. Well, Carvel is like that. He's a good electrician, we'll admit, but that alone doesn't make him a business man," he insisted seriously. "And this," slapping his hand down upon



Young Blake Gained in Business Knowledge Daily Under the Tutorship of Washington Emery Though His Advancement Was Gradual as Was the Case with the Hero of the Westinghouse Lamp Company Picture From Which This View is Taken

the books impressively, "proves that he is not a business man, not yet. So I can't say whether he should get out or stay in the electrical field—no one could. But if you ask me whether or not I consider the prospects to be good in the electrical field —"

"By cracky! That's just what we want to know," exclaimed the elder Blake, striding up to Emery and placing a hand upon his shoulder. "Tell me that. I'll know how to decide then," he ended impressively.

"I think they are damn good," averred Emery candidly. "Just consider the facts. Here's Carvel, a man who doesn't know a blessed thing about the fine points of business. Yet he makes a living and stays on top for two years," he said, his manner indicating his regard for a business where such feats were possible. "Why, good Lord! If Carvel will learn the trick of the things which really count—selling, cost finding, estimating, and so on—well, all the lawyers and cut-throat competition on earth could not keep him from succeeding. Hell, no!"

Old man Blake smiled grimly. "Just what I thought," he said in a relieved tone. "But I wanted you to say it, Emery." He placed his hand on his arm entreatingly. "I'll tell you what I'll do. You advise this boy of mine—drill some business sense into him. Then if you want to turn my clay land into bricks, I'll go you. But mind you, Carvel sticks to his furrow." He turned to his son, his expression openly advertising his hopes. "What do you say, son?" he demanded kindly.

To his credit be it said that Carvel Blake did not hesitate. That he had been weak, he knew; and he knew now that in his heart did not blame Mildred Everton for having lost faith in him. "I've been a fool," he confessed simply, contritely, his glance straying to the door through which she had departed. "You have been very patient and kind, both of you, and I want you to know that I'm grateful. And I'm going to stick in this business—and win." Again his glance strayed to the door. Then he squared his shoulders and met the gaze of the two men frankly. "I'm going to do it electrically," he announced in the quiet tone of one voicing a conviction.

"That's more like it—more like a Blake ought to talk!" declared his father exultantly, hitting him a resounding whack on the back and gripping his hand until it tingled. "Stick

to your furrow," he urged, his eyes glistening, "and you'll win." Then he turned to the capitalist. "He's in your hands, Emery," he said. "Tell him what he should do," he urged. "You'll find him willin', that I know. Do that and I'll go into your brick company whenever you're ready," he concluded with the direct simplicity of one accustomed to going through with a bargain once his word had been given.

Unqualifiedly glad that the die had been cast, that he stood committed to continue in the electrical business until success had been won, Carvel Blake acceded readily to Emery's kind invitation to call at his home that evening and talk things over. "Bring your books with you," Emery told him, "and I'll show you how to keep them so that they will be a real pulse of your business and tell you what you should know. Turnover is the thing that regulates profit, my boy, and you have been neglecting that point when buying." He studied him intently for a moment, appraising the sort of human material he had to work with. "All you lack is the 'know-how'," he said kindly, "and I'll undertake to set you straight on some things at least. Buying, record keeping, labor and selling—that's just about all there is to business, after all. But at present you are lame on everything except labor or workmanship. I can't help you with the technical side of your business, for I'm not an electrician; anyway, you are good on that count as it is. But we'll begin with the other three essentials tonight," he ended encouragingly, as he departed with the elder Blake.

Had Washington Emery been restricted to helping the young electrician only upon the occasion of his brief visits to Tryville, or by letters from New York, his shortcomings might have strained his new-found determination to succeed to the breaking point. But upon the occasion of Emery's next visit home he went for a game of golf on a drizzly Sunday afternoon, and during the play wrenched his ankle so severely that Dr. Barchester insisted upon his remaining in Tryville for a period of three or four weeks—weeks of literally golden opportunity for Carvel Blake. For during that time Emery took an almost savage delight in coaching him, giving to him of his own vast store of experience in doses that taxed his powers of assimilation to the utmost. He took particular delight in making him address him as he would a prospect, forcing him to do

it over and over again until his performance became natural and instinctive.

But for every hill there is a valley; and Carvel Blake's great good fortune in having Washington Emery's counsel stimulated Burchard Stover's antipathy to the point of active hatred. He began making a definite effort to divert business away from Blake and into the hands of Mickey Dugan. Now and then he would succeed in his sinister purpose, but the jobs were not of sufficient value to satisfy his perverted instincts; he longed to deliver a blow that would crush Blake utterly. And when he was appointed local attorney for the newly organized Economy Manufacturing Co. he realized that the opportunity he had sought was at hand. The electrical installation required by this new company involved a great deal of work and promised a very handsome profit aggregating a considerable sum; and as matters stood upon the day of the Tryville Charity Picnic the advantage was with Stover and his protege, Mickey Dugan.

Blake had learned of the formation of the new company through Emery who was considering an investment in the stock. The organization was the offshoot of a larger concern located in Detroit, and the general manager, Emery informed him, was in town to arrange for a new lighting equipment in the building that had been taken over from a defunct concern, and select the contractor to do that work and act locally for them in handling all details of an electrical character. He at once communicated with the manager, Dixon, over the telephone. "Our lawyer, Stover, is arranging for me to meet the local electrical contractors at the picnic," Dixon told him. "I want to see the town at play; and that's as good a place as any other to talk to you fellows," he explained. "See Stover; he'll tell you about the meeting," he suggested briskly.

"I'd rather be shot than ask favors of Stover," Blake told Emery, who had been brought to the picnic by Dr. Barchester and was ensconced in a comfortable steamer chair nursing his still tender ankle. Earlier in the day, while looking for Emery, he had come upon Mildred as she stood conversing with Stover and her aunt, Mrs. Birdman, and feeling that she would know of her uncle's whereabouts, he waited for an opportunity to address her. Mrs. Birdman acknowledged his salutation frigidly, and Stover contented himself with

a scarcely perceptible motion towards his hat brim, as he followed in her wake towards the pavilion. "Hurry, Mildred. I need you over at the pavilion," her aunt told her. Stover looked pointedly at the girl, ignoring Blake utterly, as he said as significantly as he could contrive: "You'll find *all* your friends at the pavilion, Mildred."

Angered beyond endurance by the lawyer's slurring remark, Blake made the mistake of apologizing ironically for keeping her away from *her* friends. She resented his speech and told him very pointedly that her friends at least did not say things to hurt her feelings. "Perhaps that's a real friend's responsibility—to say the necessary things even though they do hurt," persisted Blake. "Getting into the river isn't the only danger that threatens a girl," he went on endeavoring indirectly to warn her against Stover, whose profligate conduct with Millie Burk, a waitress in a local restaurant, had set many tongues wagging. But the girl was in no mood to harken to his advice. Telling him in effect to mind his own business, she stormed off after her aunt and Stover, denying him even the formality of saying good bye. And now poor Blake was confronted by the necessity of having to ask Stover to favor him with the information regarding the proposed conference between Dixon and the local contractors.

"Favors, hell!" exploded Emery. Of course you'll see Stover. In business a man has to do many things he doesn't like." He ceased talking and motioned to Blake to look behind him. Stover and Mildred Everton were strolling by a few feet away. It was then or never for Blake and he knew it; so pocketing his pride he addressed the lawyer, asking for information regarding the time and place of the meeting between Dixon and the contractors, and demanding the right to be present.

"The matter has practically been decided already, all but the mere formality of confirming my selection of the man to do the work," the lawyer assured him frigidly. "However, you may attend the meeting of course; you'll find us about here somewhere, a little later. We shan't hide," he ended, rejoining Mildred, who stood with her back turned to Blake. She tucked her arm in his and hurried away, calling a cheering good bye to her uncle, but ignoring Blake utterly.

"One, two, three, four, five, six, seven, eight, nine —" Not until Emery reach-

ed the fatal number did Blake realize that he had been standing with his back turned to him, lost in his own melancholy thoughts about the departing Mildred. Moving his arm up and down like a referee in a prize ring, Emery was counting him out. Blake wheeled suddenly, holding up his hand commandingly to prevent the fatal "ten" being voiced. Then he walked over to the smiling Emery and gripped his hand

hard, dropping it nervously then and starting off in the direction of the pavilion without having uttered a sound.

"Where are you going?" asked the amazed Emery.

"I'm going to find Dixon," he called back over his shoulder. "And when I find him," he muttered through clenched teeth, "I'm going to make you proud of the results of your teaching."

(To be Continued)

Fundamentals of Illumination

By SAMUEL G. HIBBEN

Westinghouse Lamp Expert Explained Basic Factors
To Electragists at Washington Convention of A. E. I.

I take it that all of us in the electrical business are really selling applied light whether we realize it or not. We sell wires and switches and lamps, and all that sort of thing. Many years ago the purchasing agents of the power plants used to buy coal, and they paid ten or fifteen dollars a ton for a certain amount of a certain kind of coal. But recently they have been getting the idea that they are buying, not a certain coal, but a certain heating value, and they investigate the B. T. U. They are not interested in buying fifteen dollars' worth of coal but in buying so much steaming and heating quality.

You will remember that some years ago, when you bought a gallon of gasoline, you bought a certain liquid, and that was all there was to it. But recently you have been more interested in finding out how many miles per gallon you can get out of that gasoline.

The same thing applies to our products. We are going to sell the result.

To get this result I am going to ask you to bear with me while I discuss the fundamentals of illumination. To understand light we must understand what it is and how it is measured. Light is that commodity with which we are going to work.

We know that light is, the physicists say, a certain wave motion sent out from the heated filament, or any illumination source, and that this product travels 186,000 miles a second, passes through all transparent objects, and so on. But that doesn't concern us quite as much as the fact that it can be manipulated and utilized.

Some queer things have come out in the last few years about this intangible wave movement. We know for example that all color is purely a question of wave motion, and if we represent a certain wave of light by a line we get red light; then another line gives us the green, and another the blue light. The only thing that differentiates colors is



Which Style of Luminaire Shall It Be—and What Size Lamp? The Customer Can Easily Decide From This Display of the Louis D. Rubin Company, Charleston

the length of the wave motion, which is an interesting thing. It is a pleasure to know what the fundamentals are of our business.

We know other peculiar things about light. We have discovered recently that light has perhaps some energy, and we know that comets going around the sun go around in such a way that there is the force of radiated light which drives the tail of the comet away from the sun. That is something interesting that we have learned about light.

I could go on and tell you half a dozen other things in the realm of physics, but coming back to the question of actual generation of light in our everyday life, I will begin with some simple light sources like the incandescent lamp such as we are familiar with.

From the heated filament the light is radiated in straight lines, and the first problem that comes to us is how we are going to measure this radiated energy. There are only three terms that the lighting man cares to know and use, but they are three fundamental terms. They are not difficult to understand, but the chief reason we are afraid of these things and don't use them in our business is because we don't understand them.

The first term is the measure of the pressure of this radiated light. For instance if we had a hose with water squirting from the nozzle we would know that the pounds of pressure of the stream of water is the measure of its force, and the pound is an easily conceivable term. But when we come to measure the pressure of this radiated light from the lamp filament we have to use a new term, and that term is the simple expression, candle power—c.p.—the candle power of this radiated light, or the pressure of radiated light. That is all that term means. The candle power is just solely and simply this pressure of light radiation. That is term No. 1.

Now let us say that this light falls on some surface and causes an illumination of that surface and we want to measure that illumination. To get at that definition I wish you would think of the ceiling of a room for example as being a snow cloud or a rain cloud, and that from this snow cloud we will conceive of snow falling on the table top and the floor surface, just as light may fall from above on those surfaces. Well supposing the snow fell to a certain thickness over the table top, and I was to ask anybody to measure its thickness, he would jab a yardstick

down through it and read "one foot thick"—that is the thickness of the snow fall on that surface.

Now conceive of the thickness of light fall, if you will, and I will ask you to measure it. But there is no yard stick with which to measure that. However, we have an instrument called the foot candle meter, and we measure the thickness of light fall with that. While we call the thickness of snow fall, feet, we call the thickness of light, the foot candle. So there we have the two terms—the pressure of radiated light, and the thickness of light fall.

Now going back to the snow analogy, I would ask you to tell me how much



Samuel G. Hibben

snow has fallen on this table top, and any school boy would say, "It is three feet wide, and five feet long, so there are fifteen cubic feet of snow on that surface." That is a simple calculation to arrive at the quantity of snow on the surface. But now how will you tell me the quantity of light that falls on the surface?

We will do it the same way exactly. We will multiply the area of the surface lighted by the thickness of the light fall that we have measured by foot candles, and we will in that way arrive at an expression of the quantity of light. We cannot call it cubic feet of light, and so we take the middlepart of the word "illumination," and we get the third and last of our technical terms, the word "lumin"—a measure of the quantity of light. So as we have cubic feet of snow, we have lumins of light. As we have pecks of potatoes, and gal-

lons of water, we have lumins of light and light quantity.

Could anything be simpler than those three terms? Now coming back to what I started to say, it is this which the customer is anxious to buy, whether he knows it or not—the quantity of light. So we have the incandescent lamp graded, not according to its pressure of light, but according to its quantity of light, or lumins, and when the lamp company gives us thirteen hundred lumins in our lamp, we may get only a certain fraction of that on our surface.

I believe that every business, including our own, is a science, and if we don't understand the fundamentals and appreciate these factors of light control and light direction and amounts of light color, we have not convinced ourselves, and we cannot properly sell the lighting job.

Chicago Lighting Exhibit

A store lighting campaign is being organized in Chicago, Kenneth A. McIntyre of the Society for Electrical Development having drawn the plans. Ernest J. Teberg, the lighting specialist of the Public Service Company of Northern Illinois, reports that the exhibit will open on March 3 and continue until March 24. Two stores in the Illinois Bell Telephone Company's building at Franklin and Washington Streets will be used for the lighting exhibit.

Local and General Lighting

Frequently when fair general lighting is installed in a plant there is a tendency on the part of the executives to believe that the lighting problem is entirely solved. While it is true that in the general run of work of shops, such as machine shops, overhead illumination of the proper type will provide sufficient illumination, there is generally some very fine bench and machine work that requires high intensity local lighting.

This might make it seem that entirely local lighting would be preferable, but this creates dark spaces and corners between machines that are extremely dangerous. Furthermore good general illumination suffices for many operations, with local lighting required for fine work only. Instead of maintaining a very high intensity overhead lighting it is often possible to reduce the general illumination, allowing a sufficient intensity for ordinary work and installing some local lighting units for fine work, thereby providing really better illumination at a lower cost.

Specifications Should Specify

Apropos of the brass tacks talk on "Debunking the Building Contract", by Charles L. Eidlitz, excerpts which are presented herein are in order.

It seems that a discussion arose at the annual convention of the electragists in 1922 on a paper read by E. H. Eardley of Salt Lake City, which had for its title, "Specific Specifications".

While it was not expressed in such a well chosen term that the average specification is bunk, yet it clearly was the sense of the convention that means should be found to clarify such documents.

At the end of the discussion on the subject, G. M. Sanborn a midwest electragist sought recognition from the chair and was granted permission to read a paraphrastic copy of a modern style set of specifications, portions of which are quoted:

"GENERAL: The drawings and specifications are to be taken together. Anything shown on the drawings and not mentioned in the specifications and not shown in the drawings shall be considered as both shown and specified and anything wanted by the architect or his friends or anybody else shall be considered as shown, specified, implied and required, and shall be provided by the contractor without expense to anybody but himself.

"DRAWINGS: The drawings are to be considered diagrammatic and are to be followed only where space condi-

tions make it possible to avoid so doing. Coincidence between the drawings and executed work shall not be considered a claim for extra compensation. The architect is not required to recognize coincidence. Coincidence between drawings and specifications shall be immediately referred to the architect who shall treat it as accidental and not intentional.

"Anything that is right on the drawings is to be considered right; anything that is wrong on the drawings shall be discovered by the contractor and shall be made right without any talk or discussion on the part of the contractor and without referring it to the owner or showing on the bills.

"Anything that is forgotten or omitted from the drawings and specifications, but which is necessary and required for the comfort, convenience and satisfaction of the owner and architect, shall be provided by the contractor to the satisfaction of everybody except himself and in full accord with the intent and meaning of the drawings and specifications and the architect, without extra cost to anybody but the contractor."

There were several pages more of carefully prepared clauses in the same style, and the entire set was printed in these columns in December, 1922. Those who recall this incident will be the more interested in the contract debunking talk of Mr. Eidlitz which follows.

Taking the Bunk Out of Building Contracts

By CHARLES L. EIDLITZ

Commissioner of New York Electrical Contractors Addresses
Meeting of Building Congress at Their Monthly Luncheon

I have chosen for my title "Debunking the Building Contracts." I have used the word "debunking," because it is rather an uptodate word, and also because it cold bloodedly expresses just what I have in mind.

Whenever I am present when a building contract is being signed, I seem to hear the angels in the distance chanting that well known refrain: "You solemnly swear that the evidence given by you to the court and jury will be the truth, the whole truth, and nothing but the truth, so help you God; kiss the book; raise your voice so the furthest juror can hear you. What is your name?"

I realize that I am taking chances here, but in 1892 I organized the New York Electrical Contractors, and went out to preach labor independence. I was told then that my young life hung on a thread.

In 1901 I organized the National Electrical Contractors Association to correct certain manufacturer, jobber and insurance grievances. Again I was marked for an early business demise.

In 1903 I organized the Building Trades Employers' Association, my idea being to popularize the New York Central four tracks between New York and Ossining. This they told me was sure death. I will admit that in this I had a number of narrow squeaks.

In 1923 I took hold of the contractors again to eliminate gambling and extras and started a campaign of "back to quality, sane cost and fair dealing." I was assured it would flivver. But we are hitting on all cylinders.

In the latter part of 1923 I took charge of the Electrical Board of Trade to correct all the evils of the industry, and I was again promised that I would not last the year out. Still I am here as you see and in the language of the late lamented John Walker, Esq., "I am still going strong."

Having been through all of these terrors, I am not really so fearful of telling you men the truth. I am told there are two ways of handling serious situations, one is to "look 'em right in the eye," and the other is to "grab 'em by the tail when their back is turned." This tail stuff always struck me as rather dangerous.

It appears to me that in recent years

—and I mean particularly the last ten or fifteen—there has crept into the building business an unusual amount of *bunk*.

In my father's day a builder took a great deal of pride in his work. Every brick had to be a perfect brick. Every joint had to be absolutely right. The mortar had to be just as good as it was possible to make it, and the lines, the levels—every detail had to be perfect or as nearly so as was humanly possible.

It was nothing unusual in those days for my father, or for that matter for other builders of his time, to come on the job, take one look at a wall and order it taken down and rebuilt—even though it was contract work—because it did not suit him and did not reflect the quality and accuracy which he stood for. I believe that if any of you men here, architects especially, came on your job and found your builder ordering a piece of wall taken down—I really believe you would rush to the telephone and call for an *ambulance* or an *alienist*. In those days a man felt that his work reflected his honesty and ability. Is that the condition today?

Now, there may be a builder in this burg who works on this basis, but certainly such men can be counted on the fingers of one hand, and I really wonder whether a man with a couple of fingers gone could not qualify as check-erup on this count. What has brought about this change? I am asking you the question, but I do not expect you to answer it. The answer is *bunk* much bunk and more *bunk*! And so I argue logically I think that if the bunk is the cause of lack of quality, lack of pride, lack of responsibility and selfrespect, then if we can *debunk* the contracts we may expect a return to decency.

But you can't debunk a thing until you gather the bunk together where you can see it and dig it out. And when you dig it out, you must take it out by the roots. I do not expect to be able to do this here today; but I hope to point out just where some of this bunk is, mark or stake it out, paint a picture of it, and leave it there exposed and naked so that you may have it constantly before you, like a September morn.

As I look around this table and recognize the different interests represented; i. e., architect, general contractor, manufacturer, sub-contractor, I wonder whether you men really want the truth, or whether the usual pussyfooting would not be more to your liking. You know I attend a great many of these functions and every once in awhile a speaker is criticised. They say "he was unhappy," "he went too far," and it has been my observation that what they really should have said was "he told the truth and we don't like the truth. We like to be stroked with the hair and not against it." But I have always realized that no animal that I know of goes after fleas with the grain; they always go in against it.

And so when a meeting is over, and everyone is pleased, I wonder whether the speaker really said anything. Particularly in an assemblage of this kind, I find that if the speaker is a sub-contractor, he softpedals on the general contractor and the architect, but he lets the supplier or manufacturer have it *right in the eye*. When the general contractor has the floor he smears it all over the subcontractor, and daintily strokes the architect's pelt in the direction of the grain. When the architect speaks, he being a believer in reciprocity, pianissimos along the entire keyboard.

As I made these last statements it was rather funny to see the faces in front of me. I have been getting wireless messages from all parts of the room. When I mentioned the general contractor, the subs were radioing their approval; when I spoke of the sub, the general got into my wave length, and each one gave me the high sign to go to it, and yet I venture to say that if I called for a rising vote as to whether I had spoken the truth so far, I would draw a blank.

Now that's the beginning of the bunk in the building business. What then is really the matter with our building contracts? Nothing much! Only that the architect is supposed to be infallible, the general contractor aids and abets him in this idea, and the sub-contractor is presumed to be a mindreader and a graduate gambler, whose slogan should

be "heads I lose and tails you win," and the poor boob is expected to smile while he signs, seals and delivers his contract, and agrees to forever after hold his peace.

Is it a wonder then, that if by some chance either or both architect and general contractor can be caught asleep at the switch, this bag-carrying sub should suddenly get a stiffening of the spine, and make an attempt to stick it in and turn it around?

It has been my job for the past year to try and change this condition in the electrical industry, and I want you to know that it's been *some job!* Now naturally I know more about the electrical end than I do about the other trades in the building business, but from what I am told by nearly all, the conditions seem to be identical.

If you bought a railway ticket, and in the rush the agent gave you too much change, you would consider it dishonest to knowingly pocket the money, even though you might argue that the railroad company had plenty of funds and wouldn't miss it. No sir, you couldn't sleep that night! You couldn't look your wife and children in the face unless you went back, even at the risk of missing your train, and called his attention to his error. I might cite dozens of examples having the same answer.

But let some contractor put in a price that on the face of it shows or indicates that he has made an error, that he has omitted or misunderstood the requirements—do you take a chance of missing the train to a signed contract? *You do not!* You get to him as rapidly as possible and get his John Hancock on the dotted line for fear he will wake up. So having landed him and he, feeling that you must have known of his error, is sore, and he needs the money, is it a wonder if he tries to get back some of this loss when you unintentionally give him an opening.

I know that the general contractor will say that he bases his bid on the low figure received, and that there is no reason why he should not do so. Again, I am back to my father's time. They didn't use the low bid in those days if they thought the bidder had made an error or felt that he could not do the work properly for the money. Those men had a sense of responsibility, not only to their owner, but to everyone with whom they did business.

But what of the builder who is on a percentage or a fee basis? What excuse

does he give? Why frequently he makes capital out of this unfortunate sub's plight, and points it out to his architect or owner as an evidence of his cleverness. Why many concerns actually advertise this sort of thing. If you were to translate some of their ads, debunk them so to speak, they would read about as follows: "Give us your job. Once we have the contract we will bait our line and whip the contracting steam up and down, till some *poor, half-starved, irresponsible, fatheaded fish* takes the hook." This sport goes right down along the line to the sub who practices the same game, only with a view to whether it will get him by. Quality cuts no ice with him either. Does this make for confidence or good will?

And now let me ask you, why should a sub-contractor particularly, and I don't know but what nowadays it applies to the general contractor, and frequently even to the architect as well, why should he try to do anything more than he is absolutely compelled to?

Formerly a man gave an owner service and quality and so he gave him the next order. It was not essential that he be the lowest bidder. He was considered low enough for the quality that the owner needed or insisted on. Today price is *king*, price is *queen* and it's all the little princes and the court jester; and that's *bunk!*

What chance has a sub-contractor for building good will today? He must be low to win. Yes, he must make a bigger mistake than any of the others to win. That doesn't make for quality and good will!

The argument is invariably made to the owner that a percentage or fee basis is the only real and economical way of building a quality building, yet this same argument is denied to the sub-contractor by the men who make it on their own behalf. Now is it the way to build well and economically? I believe it is, but if it is why does it not apply to other trades than that of bricklayer boss? What is the real answer? Less *bunk* in the contracts.

What we need today in building contracts is the unwritten or "Lost Clause." Out of forty or more clauses in the customary contract, practically all of them are filled with bunk, so I have prepared one, which is the picture I will leave for you to think over, and I call it "The Lost Clause." It reads as follows:

"This contractor must be a competent, efficient, honest man, financially responsible, and who is *known* to value his reputation *as such* above everything else in this world."

This is the clause that "Debunks" a contract.

Ventilating Fans Needed

It was estimated by the New York Board of Health that up to a few years ago 40 percent of the deaths in New York City were due, directly or indirectly, to the breathing of impure air. It is stated by the federal government that in one case of which careful records were kept, sickness in the clerical force was reduced 45 percent by the transfer of the department from ill ventilated to well ventilated quarters.



Follow the Arrow to New Business! Prepare Now for Your Summer Ventilator Trade. Ice Cream Parlors and Confectionery Stores Are Good Prospects in Every Town

Installation Problems of Yesterday and Today

By J. C. HATZEL

Address by Pioneer Electragist at International Convention in Washington and Floor Discussions Which Followed

It might not be amiss to reminisce a bit and go back to the first stage of construction some forty-two years ago, when I started in, and lead up to the present day. In those days no one had any practical or technical knowledge about the installation of apparatus or wiring systems. The man who was considered best equipped for this wiring work was the telephone wireman. He didn't have much technical knowledge of the proposition but he would simply enter a building and wire it. There was a rubber installation in those days but that wasn't used very much.

As we went along a little bit we came to the wooden moulding stage, and that is when the carpenter came into the field. Usually they were carpenters who were not good enough to do the ordinary carpenter work, but they were considered good enough to do it. So we proceeded along to the time when conduits came into use—spaghetti we called it. Of course that had its limitations. Fireproof construction came into vogue at that time, and it was a rather difficult proposition to install a tube of that kind in a fireproof building, with the other laborers running wheelbarrows over it. Still the problem wasn't as difficult as it is today. The conductors were much smaller in buildings. Where today you have ten hundred watt lamps in a given space, in those days we used ten ten candle power lamps. So that question of installing heavier conductors in large conduits didn't arise. We managed to protect the tubes that we used in those days by embedding them in concrete, so that the wheelbarrows wouldn't crush them.

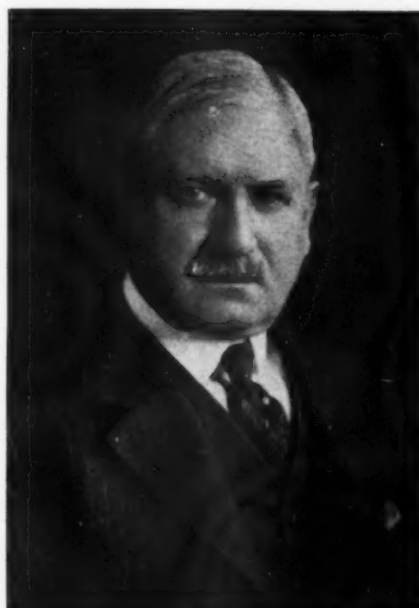
Coming down to the present day, however, our problems have increased, due to the flexibility of our electrical installation. The engineers and architects will tell you that they don't make the same provision for your electrical installation, as they do for the plumbing and steam heating. In other words, our installations are so flexible that in many instances we don't get enough space under the floor in a fireproof construction where we have large conductors in conduit, but we have to get around somehow.

We realize of course the immense

increase in the cost of building, and what it would mean if they were to allow us all the underfloor space that we ask for, in which to install our work the way we would like to install it. But we don't get it and we just have to make the best of the proposition. However, we do have provided by the engineers shafts and space in which to install our feeders and risers.

Every Problem Different

These problems in my opinion must be worked out by every individual for



J. C. Hatzel

himself. There can be no set rule for the solving of these problems. They are so different. Every building installation has a problem, and that problem is the question of space conditions generally. If we could run on the surface, the same as the sprinkler system, our troubles would probably cease. But of course that wouldn't do, because you would have a mass of conduits all over the ceiling, which would be unsightly, and in residences it would be impossible.

In residential work we have no such problems as we find in the modern office building. In residences you have of course push buttons for lighting and bell systems, and that sort of thing, but that is about all. In large office and

commercial buildings you have to provide for absolutely thousands of telephones and thousands of convenience outlets, and all sorts of systems—fire alarms, and so on—all involving large quantities of conduit and wiring. That not only involves the problem of getting your own work in, but you are obliged to avoid the other fellow's pipes.

I presume you have had specifications now and then where the architect or engineer said that you could not run your conduit within a foot and six inches, or two feet, of a steam pipe. We run up against things of that kind all the time.

Labor Saving Machinery

In talking recently with different men the question of labor saving devices was brought up. We all use the ordinary tools of course now. The mechanics have their tools which the employer supplies, consisting usually of cutting tools for conduit, and vises, and so on. But where it comes to large installations, in which a large amount of conduit is used, that is where the labor saving devices come in to best advantage. We have found it profitable to use pipe cutting machinery by which we could cut a bundle of half inch conduit at one operation. And then we use threading machines and appliances of that kind.

Of course in small installations it wouldn't pay to introduce some of these tools, unless you are situated where you are doing large buildings—industrial and large office buildings. As I say, every building has its problems, and I think you are intelligent enough to meet them and devise apparatus for each special case. I have now given an outline upon which to base a discussion of this subject.

MR. LOUIS KALISCHER, Brooklyn: Mr. Chairman, I had hopes that you might take a typical case of a large building, not quite as large as the Willys-Knight building, Elizabeth, New Jersey, recently constructed. I followed that job very closely, and I don't think the average contractor would care to go into that in great detail, because there aren't enough of those installations. But I had hopes that you might give us an outline of a typical building, and your method of handling the conduit, and the straw bosses on the job, and your method of handling the

foreman and superintendent, and your control of the contract particularly; your method of aligning teams and straw boss outfits on one floor, as against those on another floor; whether you segregated your men in different gangs, in pulling in your wires, and how you take care of your connections; whether the gangs that you use for your roughing in are still retained on the job until its completion, or whether you use other men for your final connection; and the real problem on the job that spells either success, or failure to the contractor handling it.

CHAIRMAN HATZEL: Well that is rather a hard question for me to answer, because I am not in touch with all the details now as I was years ago, and what the custom would be on one building would not apply to another similar building. Of course you take a concrete structure, one man will rush it along and you have got to hustle to keep pace with him; while another man will perhaps go along slowly, doing a patch here and a patch there. But in a large office building construction in general I would say that we take gangs of men, depending on the size of the floors, either one team or two teams, depending on the general contractor or builder. He may rush his partitions on the second floor for example and stop there.

There is no general system in use I should say that you can follow in placing your men. In our case, and in your case also no doubt, we don't encourage specialists. In other words we want our men to be competent to install all the work, or any part of it. As a usual thing we install the risers as the building goes up, and we endeavor also to install our cutout boxes. Nowadays it is the custom to use iron supports from the ceiling to secure your cutout boxes. As the shaft goes up you have got to install those, because they are probably installed in the walls.

A great problem that confronts us now, is the system of so-called underfloor duct, which is a three and a half or four inch fibre conduit, which is now used for both light and power systems. It is laid out—depending on the dimensions of the floor—with perhaps two lines, one for light and one for power. First they are laid on a bed of concrete, and they are crisscrossed, and where they cross there is a special fitting made for getting under. The endeavor now is to install such a system that it will avoid the great cost of change. When an office building goes up these days it is not rented all at once of course and the partitions are not put in, because they don't know how it will be subdivided until the building is let, or the various floors are let.

In the old days of course we had to put in our finished work, extending to an outlet here and there, and when the buildings were let this work would have to be changed about, making it a very expensive proposition. Under the new system it is so flexible that your work is put in and the changes are reduced to a minimum, with a corresponding reduction in cost. But of course this increases our troubles. It is quite a problem to get that work in to meet all the requirements. Of course every man uses a different system. In our case we depend on our general superintendent. In the delivery of material we use the checking system, and a list is sent in to the office by the foreman so that it can be checked up when the bill arrives for any materials delivered directly on the job.

A MEMBER: Mr. Chairman, Mr. Kalischer asked a number of questions that I think all contractors are very much interested in, and in answering you say you don't specialize in labor, but figure that no man is different from the other.

Now I find that this is not the way with the men we have—especially with men that we have had in our employment for any

length of time. You are bound to have some men that are very good on one class of work, and others that are very good on other classes of work. In the larger work we have found that it is best to have the foremen put men on work that they are well acquainted with and can make a good showing. We do divide our work up into sections. One gang of men will be setting panel boards, another gang will be running the heavy pipe work, and so on. In this way they make good time. When it comes to the finishing we find that we have to use an entirely different gang of men—men who can handle wire quickly, and make the connections; men who are able to understand what is required as far as the connections are concerned.

We have always found that in order to make speed on any large work, it is very essential to divide the men up in the way I have suggested, and do the work in sections.

CHAIRMAN HATZEL: That is very true of course but I was answering Mr. Kalischer in a very general way. I think that the system you refer to would be quite impossible in a general way. For instance if you had a set of men to do finishing work and nothing else they might be idle a great part of the time when you had no finishing work perhaps that you could use them on. You couldn't keep those men lying around idle. On the other hand if we have men who can do any part of the work it is up to the foreman on a particular installation to segregate those men and put them on the work that they are best suited for.

That is the idea I meant to convey in answering Mr. Kalischer. I have men with me now, who have been with me for thirty-five years. They have slowed up of course somewhat, but they are perfectly capable men, and they are men whom I can send to install a generator even, and run it, or install switchboards, and in fact anything that we do in construction within their strength. In the old days you know you were supposed to know a little of everything about the work. Now everything is specialized, and you have your lighting and power engineers, your telephone engineers, your telegraph engineers, and so on down the line.

As I say then we were supposed to know a little bit about everything, and in the installation of our generators we had no ammeters or instruments of precision, and we simply

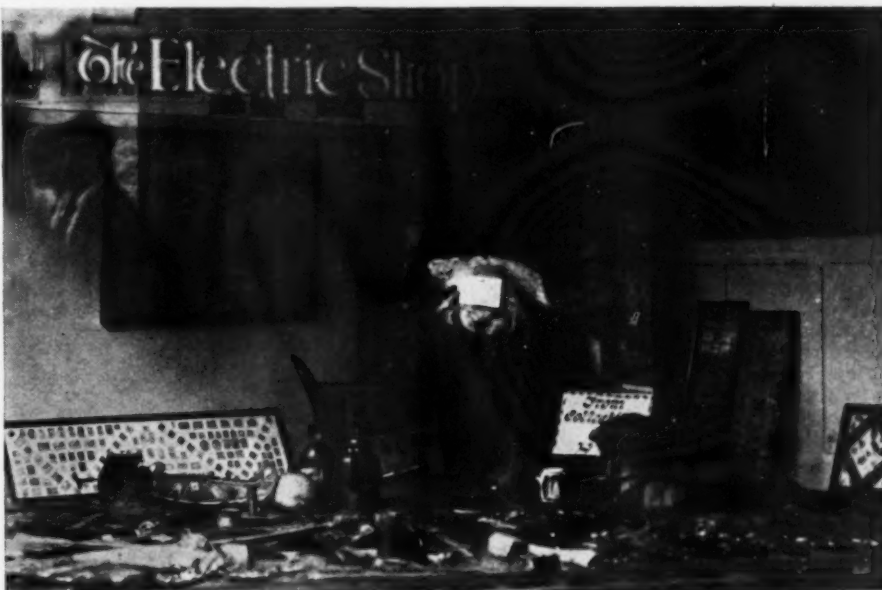
had to guess that the generator was set at about the proper voltage, from the pilot light. Even some of the old time central stations had for lightning arresters big wooden boxes like a packing case, and we would plug in to ground it. The next system for protecting from lightning was barbed wire, run on top of the poles. In those days we had to use bare copper, as we had no such thing as insulated wire. We used to run this barbed wire on insulators on top of the poles, and ground it every twenty feet. I have seen the lightning rip a pole from top to bottom, because it didn't have enough protection. It is very interesting to go back to the early stages of the art, as we might term it, and compare conditions with present day methods and present day systems.

In the early days we had nothing but the direct current, and in one of the first plants I installed in New Jersey, for the sake of economy we used overhead conductors, and ran the generators on three hundred and twenty volts. They were all small houses out there, occupied by people of moderate means, and one lamp in the series would be in the front hall, and one in the cellar, and one in the parlor. Then came along the three wire system, and we find today fair sized buildings in New York that have larger generating systems and more kilowatt capacity than some of our fairly large cities.

You take for example Erie, Pennsylvania, where they had the sixteen candle power lamp as a standard, and they would take four and a half to six watts, and when they got down to three and one-tenth watts, it was a wonder. Then came along the filament lamp, and now we have our gas filled lamp of very high efficiency.

We had nothing in the early days but the so-called Underwriters Insulated wire—with cotton insulation. In about 1884 we began using rubber insulated wire, and since then there have been improvements in insulations all along the line. The first cutouts were wooden cutouts, stored away under a bench, or anywhere.

Of course in the uptown district in New York the first work in our line was not as crude as it was in some other districts. I recall the first installation where fellows came along with chisels, in a house that was practically completed, and they cut channels in the plaster for the conduits, and then they



A Window of Old Relics Having to Do With Any Part of the Service You Now Render Will Attract Trade—Exhibit of Central Power Company, Kearney, Nebraska

went up on the roof and dropped the wire down the chimney and let it hang down there for use in the future, if it was ever needed.

In the so-called downtown district of New York the wiring was mostly on the surface, attached to wooden cleats. We had no such things in those days as the flexible cords. Our first sockets were wooden sockets, and you would take them apart and insert the wires and screw them together again. I am sorry I didn't bring down some of that old material so that I could show you what we used years ago.

I remember a switch of quite some size which was put right on the surface of the wall in J. P. Morgan's house. In the Vanderbilt houses we made up our mains of Number 10 conductors, and tied them together with small wire, here and there—bare wire—and laid them in wooden boxes, with pieces of glass between the opposite poles, and then filled it with a compound—the same compound that was afterwards used in the Edison tubes. Some years ago we rewired one of those Vanderbilt houses, and I found the same installation that we had put in there years before. In some cases, I found where the wires had been taped together and in as good condition as though the work had been put in recently.

MR. LEVY, New York Edison Co., N. Y.: For the benefit of the contractors in and around New York I will say that they can if they wish see the old methods of installation in the museum in the Edison building. We have a very complete museum there in which that old method of installation is fully exhibited.

MR. J. WALTER COLLINS, Chicago: Mr. Chairman, we all understand that you were one of the old time original contractors, and one of the big things discussed when contractors get together is what we commonly term the "policeman on the job," who is there to see that we do it right—the inspector. You were in the business I presume before you had the "copper" on the beat.

Is it your opinion that it depreciates the contractors' standing, or tends to unify them and make them all alike, simply because they all conform to the same rules? Or do you think it would be better, and the public would appreciate it more, and put the contractors in a better position to be appreciated by the public, if they went along a good deal on their own hook?

For instance in the carpenter business, they don't have a policeman running around telling them what sized nails to use in a two by four, or anything of that sort. What is your impression—was the electrical contractor in a better condition in the old days, when things were left to his judgment, than he is at the present time, where he is kept under a curb?

CHAIRMAN HATZEL: Of course much depends on the individual. If a man hasn't any love for his work he isn't going to do a good job anyhow.

I think in the old days every man who was in the art, or business, had a love for it. At least that was the case with the men who were in charge of the work, and they saw that the men under them did do the right thing. Today there is an entirely different condition. It is a matter of dollars and cents. Those who still have a love for their work and take pride in their reputation will no doubt do just as good a job, rules or no rules.

Take the inspection body—the Underwriters—they have done wonderful work, covering the whole field, taking care of conditions that might cause a fire, or danger to life. That of course brings up the rules proposition. Without that we would be much further behind, for these inspection boards help to

develop the construction of electrical installations, and safety in applying and using electricity. There is no question about that.

In New York we have had inspections as far back at 1883. In those days they had no set of rules but simply depended upon the representative of the Underwriters. I forget the name of that representative now. He has been dead a great many years. He began in New York in 1885. Later on right here in Washington we developed a set of rules, upon which the National Code was afterwards based. I forget what year that was, but I know that I was on the Committee that formulated some of the first rules. I think that was back in about 1888 or 1889—or perhaps earlier than that.

I don't think that we could get along very well without inspection departments. You know some so-called contractors don't possess sufficient knowledge of the work to do it as it should be done, and they simply slip in anything, so long as they get the dollars and cents out of the job.

MR. WALKER: Mr. Chairman, I would just like to ask you about chasers, as to whether the general contractors should lay out the chaser, or whether that is the job of the electrical contractors, or the architect?

CHAIRMAN HATZEL: Well that varies of course. You get a set of plans with your outlets marked, and the chaser is provided, or the shaft is provided, and in New York the electrical contractor is called upon to do the necessary cutting. But the bricklayers claimed that work, about twenty years ago, and in New York the electrical workers cut the chasers for outlets for one or two half inch conduits, while the brick layer, under that arbitration ruling, cuts the larger conduit. It is a matter of custom between the unions. There was an arbitration held here in Washington which was not recognized in New York because it gave the bricklayer practically all the work. It is not recognized by the building trades in New York at all. Does that answer your question?

MR. N. L. WALKER, N. C.: It does as to New York.

CHAIRMAN HATZEL: As far as I know they

worked along about the same lines in other places, all over the country. You are supposed to do your cutting yourself. Occasionally a specification calls for the general contractor, or the mason on the building to do the cutting, but that is very rarely done nowadays. Most always the electrical contractor is supposed to do all the cutting for his work.

Second District Radio Show

The fourth annual radio show under the auspices of the Executive Radio Council, Inc., is being held at the Hotel Pennsylvania, New York, March 3 to 7.

The council, which is composed of delegates from practically every radio club in New York City, New Jersey and the entire metropolitan area, has as representatives the biggest amateur radio men in the district under their jurisdiction and has the full backing of the United States Radio Inspector and the Department of Commerce. They have done much toward maintaining a perfect quiet period during the early evening. About fifty manufacturers have arranged to be present and exhibit their latest in the way of apparatus. Many new devices will be on inspection for the first time.

In conjunction with the show there is always held an Amateur Convention. Once a year the amateurs from New York and oftentimes from as far away as 1,000 miles gather together to make the personal acquaintance of the man he has been talking to over the air and perhaps has never seen.



It Is Not Difficult to Dress up Your Window to Represent an Electric Home Scene. A Few Pieces of Furniture and Several Appliances Are All That is Needed to Create This Enticing Breakfast Nook

The Advantages of Group Membership

At the twenty-second annual convention of the Association of Electragists, a plan for joint membership in the Society for Electrical Development was presented and discussed. The matter was referred to a committee which carefully worked out the details of the proposal, and being vested with power to act, the plan became effective June 1, 1923.

Previous to the time when this joint arrangement went into operation, electragists hesitated to join the Society on account of the expense; but the plan adopted offered a material reduction in the Society's dues; which was made possible by the saving in handling memberships in both organizations.

So far as it is practicable, the distribution of forms and printed matter to joint members is taken care of in single mailings. In the matter of accounting, there also is a saving to one or the other of the organizations; and while there has been practically no duplication in activities, the joint arrangement renders this quite impossible.

Following the announcement of this joint membership arrangement, many members of the A. E. I. who were familiar with the functions of the S. E. D.

at once accepted this opportunity to affiliate with the Society; likewise, some of the Society's contractor-dealer members who were not members of the A. E. I. took advantage of the reduction in dues and joined the latter organization.

However, there are a number of contractor-dealers in both organizations who perhaps have not given the matter serious thought, and to such members appeal is made in the following article taken from an address made at the twenty-third annual convention of the Association of Electragists.

In the interests of economy, contractor-dealers are urged to give heed to the facts presented. It must be remembered that the Society's activities are for the betterment of the entire electrical industry. It should be supported by every interest and every branch of that industry. Its accomplishments cannot be realized to the full until all who gain a livelihood through the industry are a part of its membership.

Electragists will be interested in what Mr. Goodwin has to say on the subject of joint membership, and all will enjoy reading his discussion of the problems which face organization work in the electrical industry.

Economies to be Effected by Eliminating Overlapping Functions

By WM. L. GOODWIN

At the Washington Convention of the A. E. I. One of the S. E. D.
Operating Vice Presidents Told Advantages of Joint Membership

The question of this joint membership in itself and what it costs to participate, is merely a means to an end rather than the end itself. The real thing we are trying to get at is the necessary machinery somewhere in the industry, and by joint action to solve many of those industry problems that have obviously not been solved, as a result of thirty or forty years of opportunity on the part of the group associations, some of which have been in existence that long.

While it has been stated that we are overorganized, and that there are too many organizations—and I think that is a statement of fact—it is also a fact that we still lack the necessary machinery to solve some of our major problems—as evidenced by the discussion here during the week of this problem of merchandising and the progress made and the results accomplished by those who are trying it.

The very able presentation by Mr. Eidlitz on the subject, "Back to Quality, Sane Costs and Fair Dealing," shows that after twenty-five years of effort in this Association, we are not much better off from the contractor's standpoint than we were twelve, fifteen or twenty years ago, as was shown by the discussion of the Underwriters' question. And there are many angles to that phase of the situation that were not brought out in debate which are, I believe, responsible for many of the conditions in the contracting business and which Mr. Eidlitz is now trying to correct through his method.

I might go on and enumerate by the hour the major problems in the industry for the solution of which we have no adequate machinery. It was to try to find a way of providing that particular machinery that this joint membership was proposed, not as the answer, but as one of the necessary steps to the answer, which is a proper, coordinated effort of all the various group associations through some central body, to

undertake these major jobs by a piece of machinery that we have lacked in the industry.

For the Industry as a Whole

We have still to find the way through joint efforts of associations to tackle these major problems in the interest of the entire industry. That is the means that we are seeking through this joint membership.

A somewhat similar joint member-



William L. Goodwin

ship has been effected with the Illuminating Glassware Guild, with the Westinghouse Agent-Jobbers' Association, and proposals are under consideration by two other associations along the same line. So that there is a possibility in the very near future of bringing about the utilization of certain available machinery with which we can get certain of these jobs done.

You heard Mr. Gilchrist talk about the merchandising problem and he said that the contractors were doing a poor job and the jobbers were doing a poor job, and the manufacturers were doing a poor job, and last, but not least, he

admitted that the central stations were doing a poor job—and we are all doing a poor job, because we lack certain facts which bring us to a proper understanding of the problems.

In order to get these facts and arrive at an understanding, we must have some neutral piece of machinery. But the mere having of this piece of machinery is not sufficient. The machinery must be kept in such working order that it can function whenever called upon.

The Society was formed in 1913, and immediately after it was formed we went into the World War, and owing to the things that happened in the next several years, the Society was obliged to mark time. However, after the signing of the Armistice, and again turning our attention to the major problems of development, the Society was revived and brought back to life, enjoying the support of many concerns that dropped out during the period of the war, with the result that its income has been substantially increased, it has commanded a greater respect and support on the part of the industry as a whole, and it now seems possible that in the very near future this piece of machinery will be brought into the work to tackle some of these big jobs.

For Individuals to Choose

If this joint membership with the Association of Electragists—International, proves successful, it will only be through the individual members of the electragists taking advantage of the joint membership that is offered, because there is nothing compulsory, and membership in the Electragists' Association does not obligate you to take membership in the Society. It is entirely optional with you. The cost of membership in the Society is nominal to the members of your Association.

We have developed in our electrical scheme of things a competitive situation among organizations that is even more serious than the competitive conditions among individual companies in groups. This situation does exist and has existed for many years, and will

probably exist for some time to come unless something is done.

There is not in the broader sense—in the practical sense of getting things done and meeting our problems in a wholehearted way—the right kind of coöperation between the different group associations, and any one who tries to bring about coöperative functioning between one organization and another runs up against obstacles that are insurmountable, so it is absolutely impossible to bring this machinery together to do a given job.

That is not generally known in the industry, but it is known to those who actually live with the question and try to get these different pieces of machinery together and put them to work.

There is competition between associations. Competition between individual companies is perhaps right as an economic question, but competition in trade associations in the solution of industry problems spells disaster for the industry. That is one of the things that we are struggling with and hope to bring about through these joint membership arrangements of which this with the Association of Electragists is merely one.

Solve Problems Together

The Joint Committee for Business Development has struggled with this problem, and I think that committee has undertaken a real job, to be the agency by which the joint action of the various associations may be brought into play, but while it is getting on the job, the Society is doing all it can to that extent.

In spite of all of the machinery that is available, as Mr. Whitehorne brought out at Camp Cooperation, organized effort is being directed by national associations, and it is being parceled out to the local organization. Hence we get such small attendance at this convention. The proper scheme of organization is the Stove Committee in each community, the local organization bringing to the national body its problems for national solution. Recognizing that situation, the Society is coöperating in every possible way toward the formation of electrical leagues and clubs, and by a resolution passed by Camp Cooperation II, the Society was delegated to go into the local field and assist in the organization of these leagues and clubs. More than thirty of them were organized during the year, and an

equal number are in process of organization at this time.

That one job of creating these local organizations is a tremendous undertaking, and the expense of doing that work has to be borne by the industry as a whole. If it is necessary and desirable, then somebody has got to pay for it, and for the present the Society is doing the best it can, with but one man available to do that work. To undertake the organization of the industry in every principal locality in this country by the formation of local leagues and clubs, requires the services of more than one man constantly. At the rate we are going it will probably take ten or fifteen years to get the job done, when as a matter of fact with sufficient financial help it might readily be done in a matter of one or two years.

Expense Comparatively Small

A careful study of the number of organizations in the field and the cost of those organizations develops some very startling figures, and it is apparent to anyone who has ever given serious consideration to the subject that if you joined all the organizations in the business the amount that is extracted under Section 5 which Mr. Eidlitz spoke about, would be considerably less than a quarter of one percent of the average business done by all concerns in this country. If the electrical men have reached such a state of helplessness that they cannot take out of this Section 5 a quarter of one percent of their total expenses to sustain an organized effort in the industry, then the case is hopeless and we can get nowhere.

There doesn't seem to be any opportunity of bringing about economies by the consolidation of a majority of these different organizations. Assuming that each of the organizations is performing an important function for the groups in that organization, then a consolidated organization representing the entire industry and giving them an equal amount of service, would represent practically the equivalent of the sum total of the dues in the different organizations. And it is questionable—in fact it is decided by those who have given the matter most consideration, that a single consolidated organization would not be as efficient as the separate organizations which we now have. Those things have got to be considered.

Now these internal policies and trade relations and all that goes with them

can be approached from two standpoints. We see evidences of this in the fact that the central station men have problems of merchandising, and the contractors, without any relation to that movement, are struggling with the same problem, but from a different angle.

Studies Are Being Made

As a result of the increase of the directorate of the Society, a plan has been formulated, whereby each of the twenty-eight directors of the Society will be given an assignment to head one of these activities, and under each director will be formed a committee made up of representatives of the different associations, so that the studies can be coördinated and carried on jointly by all the organizations at the same time, and when we reach a conclusion we will have reached it at about the same time and through all the available machinery.

To this end Mr. Gilchrist, who is heading the merchandising studies, has also accepted the chairmanship of the merchandising studies to be made in the Society, and in that way we will coördinate the activities of these three associations in trade policies, and the electragists will come into that study, and in that way we will have brought in four associations. We have been assured that the jobbers will come in, and so we shall have all the necessary machinery for studying these problems.

A committee has just been appointed by the Society and placed under the chairmanship of Mr. Crouse of Syracuse, to study this whole wiring question and to report to the directors the conclusions and the facts as they find them, and possibly recommendations for the solution of the matter.

Among these questions of wiring, is this question of the Code. That is merely one question. As I see it, without going into the arguments presented for the consideration of the judges, the Code is a means to an end, and the end is adequate and safe electrical service.

We have in two of our national associations an activity that has been actually going on for over ten years, in which one association is continually striving to lower the standards of wiring, while your association is continually striving to elevate those standards. We have got to get coördinating action between those two bodies and remove this industrial conflict.

Public Should Be Taught

We have an absolute lack of understanding on the part of the public of what a proper installation is, and no joint effort could properly present to the public what it is all about. I am merely mentioning some of the things that will be taken up in this study by Mr. Crouse's committee.

There is the question of creating markets. We have no industry joint action toward ways and means of creating markets. Primarily the work of the Society was designed to educate the public and to be the one organization that would be assigned the job of carrying the educational message to the public. To the extent that the funds and facilities have been available, that work has gone on, and every week there is sent out to more than five hundred newspapers representing a reading circulation of more than twenty-two million people, a news service which has done much to enlighten the public on all these fundamental questions of the industry. The opportunity of doing that work is tremendous. And when you consider the fact that for an approximate cost of forty thousand dollars a year we are getting our message across to over twenty-two million readers, isn't it pitiful that there isn't some way to extend that effort?

We have in this group what we call policy organizations. If you analyze the work of the group associations over a period of twenty-five years you will find that committee organizations have engaged in the formation of the policies, but that they did not have the necessary machinery to follow through with those policies. Many of the policies arrived at by this and other national group associations, go dead simply because the committees cannot follow through.

The Society is not a policy forming organization, but it provides a common forum for the discussion of industry problems. It does not make policies for groups of organizations. It conforms its methods to the policies laid down by the different organizations in the industry, but it does have the follow through machinery that permits taking up these policies, once they are arrived at, and then carrying on the work.

As an evidence of that following through work might be mentioned the material developed in the work of the National Electric Light Association during the past year, in which these various committees made certain surveys and formulated certain ideas for

the development of lighting and heating, and power, and other things related to the industry. The Society took up those reports and translated them into publications which might be used from a selling standpoint as a guide to ways and means for securing business, further supplementing these publications by letters with which the representative of the League could go into the communities and put on campaigns for more business.

Selling Expense Has Increased

Now coming down to the question of what opportunity we have through joint action of making some real contribution to progress. The average cost of electricity during the past twenty years has gradually decreased. That has been brought about by refinements and advancements in manufacturing and engineering practice. That progress is largely chargeable to the progressiveness of the public utility companies, and the manufacturing companies.

When we analyze this course of decreasing costs for electricity we find that the two major contributions to that decrease were perfection in manufacturing facilities and increased quantity production, and the perfection of manufacturing and distributing electrical energy on the part of public utility companies.

While this curve has been going down consistently for twenty years or more, the commercial curve for selling expense has been rising during the same term, going to prove that the theories of the engineers are being applied in industry through efficiency all the way along the line, and proving conclusively that the commercial men who have the job of selling our products to the public have made no progress in twenty years.

The selling expense in the electrical industry today is at its maximum point and is going up all the time, and that is why you men are struggling with and discussing this question of margins and profits on merchandise, because no matter what the margin is today, you are eaten up by the increased selling expenses tomorrow.

Ten years ago you had none of these problems of house to house solicitation, but today if you want to do a merchandising business you have to take on the added expense of house to house selling. We have made no real progress in our commercial endeavors in the presentation of our wonderful product to

the public. The next great progress to be recorded in the industry, is to be achieved through collective action by commercial men.

A Contribution to the Industry

Now if we can set up this very desirable and necessary machinery in a local Electrical League, and provide that as a means of removing some of the misunderstanding in the industry, we can produce an increased volume of business at a decreased selling cost, and we will then have made a real contribution to the industry. Progress is being made along these lines, as evidenced by the fact that a man with the ability of Mr. Eidlitz will give his time and energy to the New York Electrical Board of Trade, without one cent of expense to that body.

I say to you that when you can bring to the attention of men like Mr. Eidlitz the necessity for getting these local organizations into the work, and these old timers of twenty-five years ago, with proven ability and experience, who have been over the hurdle, come back into the fold and undertake this job of local organization, I want to tell you that every electragist in this country ought to grasp the golden opportunity to put his few dollars into these local organizations and see if we can't get something done. The cost is not prohibitive. The only objection I have heard anywhere is that the cost is too high, and it may be to some. Those who can't afford it of course we don't want to urge them to go in over their head, but to those who can afford it, it is a worth while opportunity.

I believe the local organization is the means to an end, and if we bear that in mind, I think within the next year or two we can report some real progress. Within its limited funds, the Society is doing the best it can.

I sincerely hope—and it is the first time that I have ever made a request of the contractors for help of this kind—that the members of this Association will give their support to this joint membership movement, and that they will try to bring the support of their associates to the Society.

I think there is a great opportunity to get something done in the next two or three years. I hope that instead of taking a pessimistic attitude, that we will look upon these problems in an optimistic way and feel that the machinery is being set up to go about these jobs in the right way.

Attractions at 1924 A. E. I. Convention

Beautiful Resort Hotel at West Baden Springs, Indiana,
Offers Unsurpassed Facilities for Large Gatherings

The outlook is bright for a great get together gathering of electragists and other electrical contractor-dealers, and those representing all branches of the industry, at the next annual convention of the Association of Electragists to be held at West Baden Springs, Indiana, from September 29 to October 4. And all who attend will find the accommodations of the hotel at this great resort adequate and pleasing in every way. None will want for the comforts of home and still realize the luxuriousness of a hostelry that is renowned for its modernness the world over.

Located almost in the exact center of population of the United States—the government marker is only a few miles away—the West Baden Springs Hotel at West Baden, Indiana, is particularly well adapted for a convention of the character of the twenty-fourth annual meeting of international electragists. For it should be remembered that at the last annual convention of the A. E. I. at Washington, D. C., it was decided to hold the convention in 1924 at a resort rather than in a large city, so that business and pleasure could be happily combined.

The facilities of the hotel are unsurpassed for conventions. Meeting rooms of varying size ranging from a small committee room to the immense auditorium afford opportunities for gatherings of all proportions. A convention hall seating fifteen hundred people connects directly with the main hotel building, and an assembly room which seats five hundred is in close proximity. A picture theatre is situated on the main floor.

The hotel, an immense steel and concrete structure—fireproof—is artistical-

ly designed and substantially built and is said to stand second to none among the great resorts of America. Twelve hundred guests may be accommodated. It is conducted on the American plan and the cuisine is given a distinctive excellence on account of the use of foods fresh from the farms, gardens, orchards and dairies of West Baden. The rates are very reasonable, since such desirable accommodations are provided, including all meals and other charges as low as \$7 per day, the highest cost being limited to \$10 per day. It is expected that the registration fee for this year's convention will be no more than \$5.

Group luncheons or dinners are easily served because of the planned layout of the dining rooms, and the services of expert chefs only are employed. Forty thousand square feet are contained in the Pompeian room which has a mighty dome two hundred feet in diameter. This is open at all times for events peculiar to every convention where large, natural light space is especially desired. Here sessions of sports and evening parties common to big assemblies may be held with privacy and quietude.

A well known feature in regard to West Baden as a resort is its health giving qualities and many are attracted by reason of the pure waters which come from natural springs. It is said that more than a century ago early settlers learned of these fountains of life and braved long and dangerous journeys to partake of them.

The hotel capitalizes on these properties. Connected with the main building are the baths which are easily accessible from the corridor on the main

floor. Sulphur, mud and tonic baths are perhaps most frequently indulged in, under the direction of expert attendants. A house physician is available at all times.

All forms of sport are provided. A golf course, one of the most favorably known in the middle west, is open daily to guests, and tennis courts, and a swimming pool are always available. Indoor amusements such as pool, cards, billiards and bowling provide a wealth of pleasure. Many miles of woodland trails and shaded country roads among the hills make riding an unusual joy, and delightful walks as well may be enjoyed.

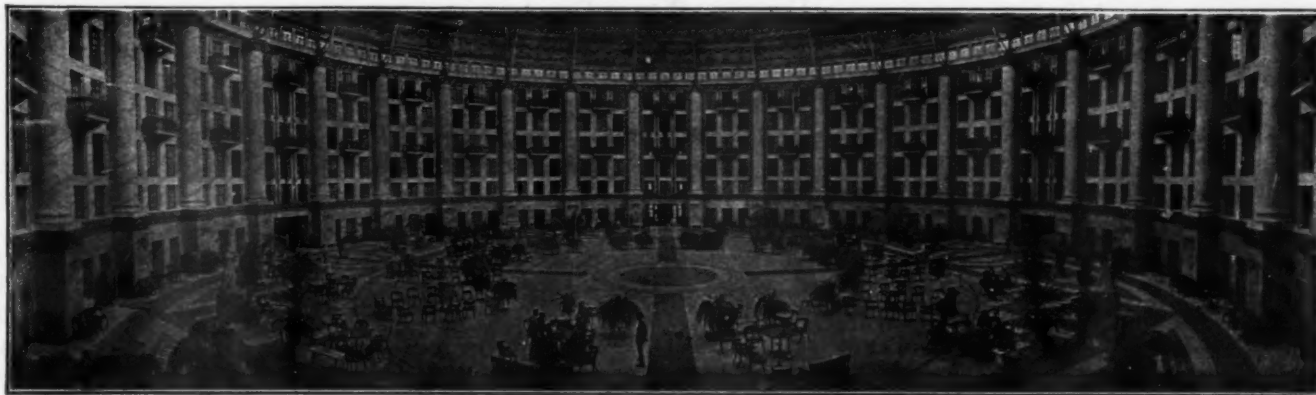
Adequate accommodations are provided for motorists. Two hundred automobiles may be parked under cover without charge, and fifty cars can be handled at the service garage at an extremely low cost.

The slogan of the 1924 convention is "Business and Pleasure Happily Combined." Tell it to others. Plan to attend—electragists, contractor-dealers.

Wavelength-Kilocycle Table

The following figures enables anyone to convert wavelengths in meters to kilocycles or vice versa. The kilocycle is coming into more general use in broadcasting station announcements.

Wavelength	Kilocycles		
261	1150	420	715
273	1100	423	710
278	1080	429	700
309	970	430	697
319	940	434	692
326	920	441	680
332	903	448	670
337	890	455	660
345	870	462	650
360	832	469	640
380	790	476	630
385	780	484	620
390	770	492	610
395	760	500	600
400	750	509	590
405	740	517	580
411	730	526	570
417	720	536	560
		546	550



Unusual Facilities Are Offered by the West Baden Springs Hotel for the Next Annual Convention of the A. E. I., Which is to be Held at That Popular Resort from September 29 to October 4. This Shows the Famous Pompeian Room, the Great Dome of Which is 200 Feet in Diameter

Chats on the National Electrical Code

BY HUBERT S. WYNKOOP, M. E.

Monthly Discussion of National Electrical Code Practices by Well Known Authority in Charge of Electrical Inspection, City of New York

Signal Wires Crossing Roofs

Section 301 b requires an 8 foot clearance between "line wires" and roofs over which they pass. Is a service wire a "line wire?" And if not should not the Code require—at least for the higher voltages—an 8 foot clearance for service wires not in conduit? Also since some inspectors are disposed to apply this clearance requirement to signal wires, should there not be some reference which will show more clearly than the context does that 301 b does not apply to signal wires, which are supposed to be considered solely in Article 60?

Grounding D. C. 2-Wire

No. 15 Ac, of the 1920 Code, prohibited the grounding of a 2-wire direct current system at more than one station. In making the amendment and transferring the rule to the 1923 Code (see 902a) the above prohibition seems to have been lost. I cannot find that the Electrical Committee deliberately authorized its omission.

Fixture Splices

In reading a bulletin issued by one of the inspection departments I was struck by the fact that while making a perfectly proper elaboration of 1403 h (which should be 1403 f) the writer had in mind a canopy fixture supported by screws. In his territory he may not have encountered our difficulty in New York, where we invoke the rule to prohibit a centre socket used as a support for a canopy, or dish, fixture. We are aiming to stop a practice which has become quite prevalent here, namely, to attach to the outlet box hickey a pipe with a long running thread, pass the fixture over the pipe, support the fixture in place by a socket cap, and then connect and assemble the socket. To inspect splices, the inspector must "unwire" the socket and take it off the pipe.

Gas Pipe as a Raceway

Given an old church piped for gas, columns of I beams covered with imitation marble, each column carrying two gas brackets diametrically opposite and fed by a pipe running down from the base of the arch, the church

now being wired and it being desired to use the old gaspipes in the columns as conduits: Should this be permitted? Well we couldn't be sure that the gas pipe had been cleaned, or could be, and we were doubtful as to burrs on the T at the lower end; so we suggested that armored cord be drawn in from the arch to one bracket outlet and then fed through to the opposite outlet.

Fuse in Grounded Wire

In Section 805 c of the Code—as formerly in No. 23 d—is a prohibition of a fuse in any grounded wire except in the 2-wire branch circuit; and under the 1923 Code the fuse in the grounded wire of the branch circuit may be omitted by permission of the inspection department.

For several years there has been some discussion as to the degree of dependence which can be placed upon the lighting companies. An unreliable company might reverse its service wires and thus place the service switch and fuse in the grounded wire, leaving the "hot" wire unprotected. This could happen, however, only in the case of isolated transformers, as a wrong connection taken from a secondary main would promptly expose itself. For this reason the Code still calls for double fusing of a two-wire branch circuit, as this is the only protection left in case of reversal of polarity. But in order to accommodate those inspection departments which feel that they can control the situation satisfactorily, permission to omit the second branch circuit fuse is provided for.

Loricated Pipe as Ground

Can an inspector be accused of impatience when he "blows up" because some dumbbell of a contractor attempts to get by with an artificial ground consisting of a length of driven loricated conduit?

New 15 Ampere Rule

Speaking of impatience, I'm losing faith in those inspectors who have so little vision they are complaining over difficulties which are arising in connection with the new 15 ampere branch circuit rule. Of course there will be

difficulties! We must iron them out; and we can do so intelligently if we wish. But it's always so much easier to resist change, to accept present ills rather than try new solutions of old problems. After a while we shall have learned by experience what modifications ought to be made in section 807; but to go back to the 660-watt rule (or any other speculative value)—never!

Over 5,000 Volts in a Building

Section 5003a prohibits wires operating at a potential exceeding 5000 volts being placed in or above buildings other than central stations, substations or transformer vaults. This requirement is carried over from old No. 47. But suppose that the vault is not located next to the service wall, and it is desired to install 6600 volt transformers. How can this be done, under the Code?

Section 401b gives a lead. If the cable is laid in conduit or duct "placed under 2 inches of concrete beneath a building, or buried in 2 inches of concrete or brick within a wall, (it) shall be considered as lying outside the building." In the absence of anything to the contrary elsewhere, I think this would justify the 6600 volt line from the service wall to the vault. Then if we call for a grounded lead sheath in a grounded conduit we ought to have a pretty satisfactory job.

Fixture Chains

Fixtures grow flimsier and flimsier. Just now we are fighting weak links in fixture chains. Some of these links can readily be crushed between the fingers or opened up by a good pull on the chain.

Arc Welder in Garage

What ought to be done about an arc welder in a garage which is used also as a repair shop? Article 33 of the Code calls for the placing of all sparking points at least 4 feet above the floor—and a welder is quite generally useless when so located. Furthermore other authorities seem to be not particularly distressed over the presence of forges, acetylene torches and similar apparatus, none of which is or can be kept

4 feet above the floor. Under the circumstances we would feel rather foolish if we insisted upon a too rigid compliance with the Code in this particular.

Grounding of Motor Frames

It is only in rare instances that the grounding of frames of permanently located motors cannot be readily accomplished. The claim that it is im-

practicable to ground, owing to the fact that a long run of open work supplies the motor, usually falls to the ground when the case is investigated, because there is available some kind of a suitable piping system or a steel building skeleton, which is already a good ground or can be made such by bonding in the basement to an assured ground.

Improve the Code Through United Effort

BY A. PENN DENTON

Code Chairman of Executive Committee of A. E. I.
Addresses Western Inspectors at Omaha on January 31

The Association of Electragists in 1922 received an invitation to have a part on the program of your convention that year. The subject assigned and on which I spoke was "The Contractor's Place in the Unity of the Electrical Industry." At that meeting all branches of the industry were represented by speakers on this subject, and when all had had their say, we were all agreed that the National Electrical Code was the one thing that all had in common in uniting the electrical industry and the inspection interests.

I said to you in 1922, and I would repeat again today, that the importance of Article II of your Articles of Association applies equally well to the electrical industry at large, as well as the inspectors. Let me repeat it, as did your president in opening this meeting: "The object of this Association shall be to improve the methods of installing, maintaining, and using electrical wiring and apparatus, to obtain and circulate information regarding electrical practice, and to establish efficient and uniform methods of inspecting and supervising electrical installations with reference to hazards to life and property."

The prime function of the National Electrical Code is to provide the public with a guarantee of adequate protection to life and property under all conditions of electrical service. The inspectors, insurance interests and the electrical industry are committed to a program of making and using this Code.

The life of an electrical installation should be for the life of a building; therefore, the highest standards for wiring buildings, both residential and commercial, should be observed.

Better electrical installations demand

that our Code standards must improve to meet the increased loads on branch circuits, which are permitted under the 1923 Code. A few years ago a branch lighting circuit carried nothing but lights and all of these of moderately low wattage. Today branch lighting circuits must carry in addition to the greatly increased lighting load, all kinds of electrical heating appliances and small motor driven devices. The increased load on branch circuits has been more than doubled, while at the same time the ampere carrying capacity of the No. 14 branch circuit wire has not increased, with the result that we no longer have any factor of safety in the carrying capacity of the circuit wire. The contractor believes that all of these facts are the best evidence of why there should be a wattage limit for the design of all new lighting circuits which will not exceed one thousand watts.

It is a fact that no electrical man will deny that lighting circuits designed today and in the future, will never carry less load, either lighting or utility devices but will always be required or expected to take more. We believe that the 15 ampere fuse limit, given us by the 1923 Code, should be the maximum load capacity, but that no newly designed circuits, whether for residence, store, or factory building, should be permitted as a part of a modern electrical installation, with a designed capacity exceeding 1,000 watts.

Cheaper Wiring Advocated

Cheaper wiring methods and electrical installations in the residential buildings of our cities have been advocated by many large central stations and some manufacturers in recent years. Is this a practical thing? It is a known fact to every electrical man, with practical experience, no matter what part of

the country he may come from, that the average residential electrical installation receives more wear and tear in its use than the average commercial or industrial installation. The electrical contractor is in a position to know that the best in electrical wiring devices and installation methods which the Code gives us today, are none too good to stand the strain of residence use.

The central station profits most from the highest type of electrical installation in the residence and industrial building, because where the electric wiring is so installed that the central station's service is never interrupted and where the central station's trouble man is never called, that customer is always well satisfied with his electric service.

Higher standards for service installations, including conduit wires and enclosed switches, have been recognized and are being rapidly adopted by the industry. Central stations in all parts of the United States and Canada have, during the past year or two, particularly recognized the need for the best standards in the installation of service wires for all classes of buildings. The installation of the service wires in rigid conduit, terminating in an outside metal service waterproof fitting, and inside the building at the meter in an improved standardized safety type service switch with meter trim enclosure concealing all wires until the branch circuit cutouts are reached. This type of service installation is heartily approved by most contractors and particularly so by the members of the Association of Electragists.

We firmly believe, however, that if these N. E. C. metal standards are so desirable and necessary to the consumer of electricity from the central station standpoint, the same installation standards are equally good and just as necessary in wiring the remainder of any building, whether it be residence or factory. Cheap wiring benefits no branch of the electrical industry, makes trouble for the inspector, and least of all does it benefit the owner of the building wired.

The members of the Association of Electragists feel that during recent years there has been a tendency shown to giving wider latitude with N. E. C. standards, this being the result of requests made by certain groups within our industry for lower costs in wiring materials and wiring systems. The electrical industry cannot afford to lower the

present Code standards for materials, devices, or wiring standards and systems. No group of men recognize this fact better than the members of the Western Association of Electrical Inspectors. During recent years the inspection departments of many of our larger cities have been responsible for the adoption of local electrical ordinances by which provision has been made for the installation of all electrical work in their respective localities in accordance with the very best standards of the Code. The passage and adoption of these local ordinances has clearly shown a real demand on the part of our cities for the best in electrical installation, namely, the all metal installation.

The Association of Electragists believes the time has arrived when the minimum standards of the Code should be raised to a higher level. There is no good reason why Omaha should have one wiring standard, and at the same time Chicago, St. Louis, or New Orleans each have different ones. These widely different installation and material standards work a real hardship on the manufacturer, jobber, inspector and contractor. A united effort made at this time by the electrical industry, the insurance and inspection interests, all joining hands in raising our N. E. C. standards to the point they should be, so that all cities of this country could use one standard, will result in the greatest advantage to all interests, including architects, engineers and builders. No greater service than this could be rendered the building public we serve throughout this country. We contractors want to know how long are we going to delay getting to work on a program of this kind.

The problem of better electrical installations is equally important in all classes of buildings in the rural districts of this country, as well as in the cities. The manufacturer, jobber and contractor selling wiring devices and materials for rural installations today must recognize the absolute necessity of furnishing only standard city installations, because the temporary isolated farm light plant will soon be replaced by the transmission line service of the central station. I have heard electrical men say that the average farm residence does not require as good an electrical installation as the city residence. This certainly is not practical from the contractor's or inspector's standpoint, and I believe the fire insurance companies have a greater reason for wanting

the fire hazard features more carefully protected by the best in electrical installation standards in the rural residence than for that one in the city. Certainly the central station serving a rural community, at a distance considerably removed from the plant, will want the buildings wired in the best possible manner, thereby eliminating all possible chances for wiring troubles and the interruption of the rural customers' service.

The Association of Electragists therefore comes to you at this time with an appeal to the Western Association of Electrical Inspectors to coöperate with us and the electrical industry as a whole in working for an improvement in National Electrical Code Standards through local code committees supported by local electric leagues or clubs, to the end that as minimum standards they may be improved and raised to that point where, as the engineering standards of our industry for wiring material, standards and systems, the N. E. C. will satisfy the needs and requirements of the cities and rural districts of the United States and Canada, and thus prevent the growing tendency of a different set of standards or a different Code for every city throughout this country.

New Standard Symbols

The revised Standard Symbols for Wiring Plans are now in the hands of the American Engineering Standards Committee, and it is hoped that they will be released without delay, as the Standard Symbols now in use are quite out of date.

It was just about twenty years ago that the National Electrical Contractors' Association, which since has become the Association of Electragists—International, took up the question of the standardization of electrical symbols. At the annual convention held in Boston in 1905, the Symbols Committee Chairman, G. M. Sanborn of Indianapolis, submitted a set of symbols which were adopted and distributed throughout the country.

Since that time, especially during the last few years when the necessity for revision became more apparent, several attempts have been made to revise the old form; but not until the task was again wished on Mr. Sanborn was anything accomplished along these lines.

Early in the year 1920, the Symbols Chairman of the Executive Committee of the National Association succeeded

in interesting some other organizations in the matter of standardizing symbols, with the result that under the auspices of the American Engineering Standards Committee a sectional committee was appointed for investigation, the plan being sponsored by the Association of Electragists, the American Institute of Architects, and the American Institute of Electrical Engineers.

In September, 1921, the Sectional Committee met, and in addition to the three sponsor organizations aforementioned, other interests were represented as follows: Bureau of Engineering, U. S. Navy; Supervising Architect, U. S. Treasury; Department of U. S. Army having to do with construction; U. S. Bureau of Standards; Associated Manufacturers, Power Club, N. E. L. A., N. F. P. A., and others. C. Kaiser, of Kaiser, Muller & Davies, New York City, was elected chairman, and Farquison Johnson, editor of THE ELECTRAGIST, was elected secretary.

The Sectional Committee then placed the preliminary work in the hands of a subcommittee, which immediately began to make a collection of the various symbols in use at that time. After making a compilation of this material it was made up into sheets, and copies were sent to members of the committee for study and comparison.

In this manner practically all of the available symbols in use by the various companies and organizations in the country were carefully gone over. At following meetings the work of revision was made easier by the endeavor of the committee to confine its selection to the symbols that were more generally used by the majority of draftsmen—and it was noted that most of them used symbols similar to the ones originally adopted by the Association.

In the spring of 1923, the subcommittee submitted its report to the Sectional Committee, since which time the members of the latter have discussed suggestions and changes. A few months ago the report was formally approved. The approval of the sponsor organizations was then procured, after which the report was passed along to the American Engineering Standards Committee for its final action. It is understood that a referendum is now being taken by that body and that the revised Standard Symbols for Wiring Plans will soon be ready for adoption.

The Association of Electragists will print and distribute the new symbols as soon as they are released.

Achievements of Radio in Public Addressing

Several times in the past year the people of the United States have had the opportunity to listen to their chief executive over the radio. President Harding was the first to speak to his people as President. He was followed after his death by Mr. Coolidge and then by Mr. Wilson who talked just a short time before his death. All three of these men have been enthusiastic radio fans personally and all have had their own receiving sets. They have seen the great power that radio wields and have all taken advantage of it.

Doubtless the coming presidential campaign will utilize the radio broadcasting stations more or less. Just how the programs can be carried out without prejudice is not clear at the present time, but without a doubt the broadcasting stations will in time take on party lines just as the newspapers and magazines have done in the past. The thing for the listener to do is to tune in on the party talk he most desires to hear.

Perhaps radio will do what partisan newspapers have failed to do in the past, that is to give the listener the other side of the story. A newspaper reader with a political preference usually sticks to the newspaper that tells the political story the way he wants it told. With the use of radio the listener, without perhaps knowing it, may listen in to the opposition story and be convinced that perhaps he was wrong and there is some truth in the other fellow's version.

Just as each political party considers the members of the other party all demons, so a better understanding will show that there are great minds and clear thinkers in both parties, and if the real truth can filter through perhaps there will be less log rolling and less obstruction of good legislation by party policies. Then may come a realization that

after all what the people of this country need more than anything else are good and true men at the helm rather than all Democrats or all Republicans, or all of some other party.

The two major parties in this country will more and more realize their responsibilities when they know that through the radio the whole people of the country are enabled to have all political problems reviewed to them from a number of different angles.

With the number of receiving sets in use in the United States at the present time, and with the successful connecting up of a half dozen broadcasting stations in various parts of the country, there is a possibility that nearly nine tenths of the entire adult population can hear one man speak. In previous combined broadcasting attempts, it has been estimated that fully half of our more than a hundred million people were able to listen and did listen.

Extensive preparations have to be made at present for a program of this kind. The air has to be cleared of all other broadcasting and the various broadcasting stations have to be linked up either by land lines or by relayed broadcasting. Perhaps in the near future it will be possible to carry out a scheme of this kind without disrupting radio activities to such a great extent.

The things that seem easy now were difficult the first time they were attempted. The developments in radio have been so amazing and have followed each other in such quick succession that almost anything under the sun seems possible.

If radio is to influence the coming elections, let us hope that it does a good job of it and that the people of our great country will have no cause to complain.

How to Sell Radio by Mail

This Work is as Interesting as it is Profitable
For the Electragist—Some Sample Letters

A follow up letter campaign has proved time and again its ability to bring business to a store. Not alone in the radio field but in any field a system of followup letters will bring in almost a fixed percentage of returns, the percentage varying directly with the excellence of the letters and the care used in preparing the list of people to whom the letters are sent.

The most important part of a mail campaign is the preparation of the list of prospects and the handling of the list after the campaign is under way. A mail campaign does not necessarily mean the collection of thousands of names and the expenditure of thousands of dollars in printed matter, literature and other things. It may even be effective if concentrated on a dozen or two dozen names. In fact for a small store such a small campaign will usually bring in as great a percentage of returns as a much larger campaign because the person who conducts the campaign will be able to give more individual attention to the work and will be able to get more out of it.

It is very much better to start in with a small list of really good prospects, adding to the list from time to time than it is to collect a great list of names of more or less doubtful value.

You should start in by securing a couple of hundred index cards, library size, three by five inches, and a file or box of some kind to keep them in. If the list is small at the beginning, no guide cards will be needed, but if there are more than one hundred names on the list an alphabetical guide set should be secured so that any name can be quickly found. As the list becomes larger it may be necessary to put in additional guides or adopt various flag systems. A flag is a little metal clip which can be attached to the upper part of the card so that it sticks up above the rest of the card. By having these flags of various colors and by varying their positions along the top of the card it is possible to list a dozen different kinds of information about the card with a couple of flags. For instance if your first letter is called No. 1, you can put a white flag at the upper right corner of each card in the list to whom this letter is sent. If the other letters are numbered in succession, the position

of the flag can be changed or additional colored flags can be used. Personal calls, telephone calls, answers or calls from prospects can be signaled in some other way and consequently the list always shows exactly what has been done with each name.

When the list is first prepared, if the letters are all sent out at the same time, the cards might be considered all of equal value. As the campaign progresses, however, many things turn up and the cards all come to have different values. Some of the names are heard from, some come in to buy, some will be found to have moved and left no address and so on. A certain small percentage of the list will be sure to become buyers and it is equally certain that some names will turn out to be dead insofar as prospective buying is concerned.

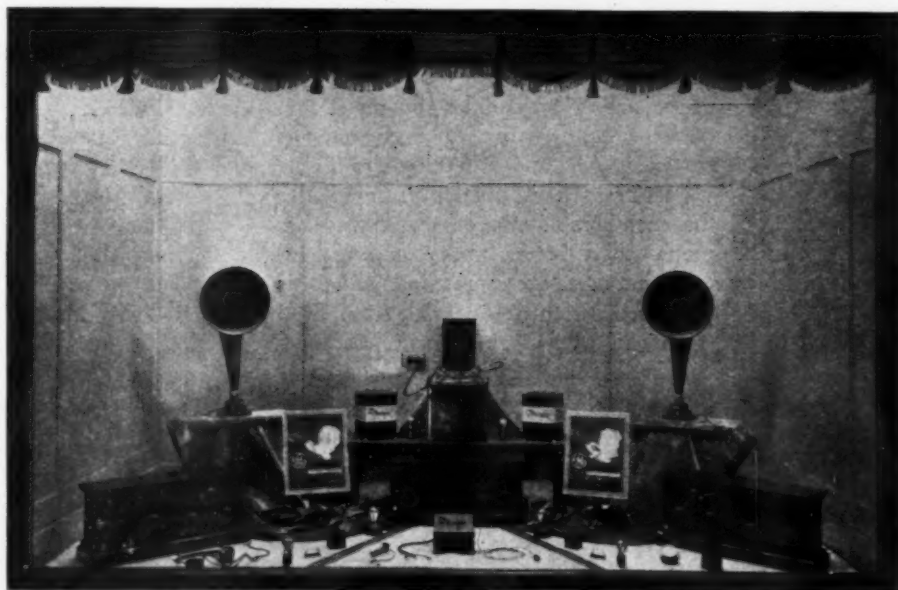
In starting the list, put down the names and addresses of all the people you can think of who could buy radio outfits and who do not already have them. It is not necessary to go to any great investigation in determining this as the list will clear itself up as time goes on. Then to this list add such other names as you can secure from other sources. If you keep a list of cash customers in the store, all these names can go on the list. If you are in a small town it would be very helpful to use most of

the names in the telephone directory, leaving off the names of business firms and such others as would naturally not be prospective purchasers of radio equipment.

Send out a preliminary letter to the entire list or to a section of the list. If desired, the list can be worked on continuously, sending out a few letters each day. The letters accompanying this article are ones that have produced business before and they can be used with such changes as the electragist may find desirable to make, or entirely different letters can be composed to suit local conditions.

The composition of the letter is of great importance if it is to bring in any returns on the investment. Thousands of firms are carrying on mail campaigns today. Even the farmer in the most remote district receives letters asking him to buy gilt edge oil stocks, industrial stocks, bonds, fertilizer, pianos, general merchandise, clothes, automobiles and in fact almost everything under the sun. The selling letter is therefore going to meet with a good deal of competition and it will have to have a real selling appeal if it is to get across. The introduction, the general language, the form, the workmanship, everything counts in getting the letter over.

The city man and the office worker



Simple Radio Displays Are the Most Effective. While This One, Conceived by the Merchandising Department of the General Electric Company, Features the Battery Charger It Also Shows the Relation of This Device to Batteries, Sets and Loud Speakers

receives even a greater quantity of promotion letters than his rural brother and as a consequence even more time has to be expended in the composition and makeup of the letter to get it across. He has less time to read such letters and consequently a brief scanning of the letter indicates at once whether he is interested or not and if not, it is quickly consigned to the wastebasket.

Selling letters can be roughly grouped into five classes. Letter No. 1 is a general letter, not trying to sell anything in particular but calling the attention of the prospective customer to the facilities of the store, to the success of radio and to the enjoyment of owning a radio set. A letter of this kind makes a very excellent preliminary letter to be followed up later by a letter of a different type.

Letter No. 2 is a letter of a specific type, offering a specific piece of apparatus, giving the general description and naming a definite price for the thing offered. A letter of this kind is of greater value if used following a general letter such as letter No. 1.

Letter No. 3 is a so-called bargain letter offering a specific piece of merchandise at a money saving price, usually for a definite time only. A letter of this kind is more likely to bring customers into the shop and result in actual sales than any other kind of a letter, but it must be remembered of course that the merchandise which is sold usually does not represent a very great profit to the store on account of its being sold at a considerably reduced price. Such a letter must be honest and sincere. It is wholly ineffective if the price on the article is the same as offered by all other merchants. In order to take the fullest possible advantage of an offer of this kind the store should arrange in advance to have a sufficient supply of the articles on hand to last a reasonable time.

Of course the real intention in back of a letter offering something at a bargain price is not to sell the particular articles so much as it is to get new customers into the store so that they will then buy other things, either at the time of the bargain sale or later.

A goodwill letter such as No. 4 can be used almost at any time during the campaign, or any time at all for that matter. Many firms make it a practice to send out letters of this character every month. Upon the cleverness with which they are written will depend the success they will attain.

Especially in the radio field, information letters are of great use. If the subject matter is of a character that will make it likely that the person that receives the letter will put it in his pocket, so much the better. Every time he looks at the letter he will again be looking over your name and address, and selling of this kind cannot be anything but helpful.

There is a great deal more to letter writing than can be put into a short article of this kind. Here it has been necessary to limit the discussion to the bare principles. Mail campaigns have been known to sell up to as high as twenty-five percent. Bargain letters produce the best results, and if the letter is properly written, the prospect list a good one, and the offer a good one, results of between ten and fifteen percent may be expected. Goodwill and general letters will not bring in much if any direct business but assist in other ways in getting the prospects into the store later.

It must be remembered that the great mail order houses have letter writing experts who receive large salaries and who can write letters that almost wring dollars out of pocketbooks, and in competition with these letter writers the average radio storekeeper will not show up to great advantage. But if he has a good store, a good stock of materials and parts, and is honest and sincere, he can dig up a certain amount of business by mail.

Nor should it be thought that selling can be completed by mail. After all mail efforts have failed, prospects can sometimes be brought to the store by means of telephone and personal calls and in other ways known to most business men. Radio goods require real selling—not order taking—and the more selling methods are used the greater will be the sales and the greater the profits.

Letter No. 1

You must have noticed in the past year the wonderful success of radio telephony. Probably you have listened to broadcasting through a receiver at the house of some friend. Perhaps you have noticed that two past presidents and our present high executive have spoken over the radio. Also there are plays, operas, ball games, boxing matches, dance music, lectures and so on, in the air every night in the week.

All these are at your command if you have a receiving set. Receiving sets can be had all the way from \$10 to \$1500. The smallest and most inexpensive set will receive from one or two local stations. But naturally reception will be better, more distant stations can be heard, and the loud speaker is a great convenience in the larger sets.

A set costing between \$50 and \$75 will be

found satisfactory for average use. The extremely high priced sets are built like period furniture and will receive over great distances.

We have a complete stock of receivers of various types and will be very glad indeed to show and demonstrate them to you at any time that you can stop in.

Letter No. 2

The designers of radio equipment have made great strides in the past year. Most all receivers will operate satisfactorily over their intended range, but one of the greatest objections to the use of radio in the home has been the mess of wires, batteries, etc., which are hardly an ornament to a living room.

We have just received a consignment of receivers of well known make, entirely enclosed in a handsome cabinet, batteries and all. The finish is either mahogany or walnut and the size and proportion is such that its appearance will not detract from the appearance of the room. It is no longer necessary to take the radio up in the attic or down in the cellar. Now the broadcasting can be received in the living room where the family and callers can listen in comfort.

It will be a great pleasure to show you these receivers. A small circular enclosed with this letter gives an idea of the construction but the beauty and convenience of the outfit can only be determined by an actual inspection.

Letter No. 3

We have one hundred crystal radio receiving sets to be disposed of at the very unusual price of \$7.50 each. We have ordered our spring stock from the manufacturers and find it necessary to make room on our shelves for the new merchandise. The sets we are selling at this very low price are perfect in every respect and will give good clear reception from local stations.

Just the thing to start the boy's interest in radio. Naturally, the price does not include headphones or antenna, but these can be had for about \$8 additional and if a larger set is used later, the same phones and antenna may be used on the new set.

Our suggestion is that you act soon as we are certain that the stock will be exhausted in a very few days after which time it will not be possible to secure these sets.

Letter No. 4

There is a lot of satisfaction in dealing with a concern that expects to stay in business for a long time. Naturally we want to add new customers to our list because we expect to sell satisfaction and if you get that satisfaction we will make the ordinary profits that keep a concern in business and make a living for us.

In addition to our regular line of electrical goods, we are carrying an unusually complete line of radio equipment both for the beginner and for the more advanced amateur. Our salesmen are thoroughly familiar with radio reception and transmission and will be very glad indeed to advise you in any problems you may have.

Letter No. 5

On Wednesday, March 12, there is to be an extremely interesting musical program broadcast from the Hudson Hotel. The Apollo orchestra, one of the most famous in the country is on tour and will play at the Hudson that evening. The broadcasting will be through CBQR and the program will start at 8:30.

May we suggest that you make arrangements to listen to this program on the 12th? If there is anything you need to put your radio set in perfect condition, our facilities are at your service. Our experts will be glad to give you any advice preparatory to your entertaining your friends on that evening.

The Standard Accounting System

Striving to build a business without complete knowledge of all the facts, the costs, the unsuspected leaks, the losses on unprofitable efforts—that is a handicap that is holding many men so close to disaster all the time that they are never able to develop. Lift that burden from their shoulders so that they know the true condition of their business, and the morale not only of the individual changes but the general atmosphere of the business itself reflects the new confidence.

Men hesitate to adopt better accounting methods oftentimes thinking that it means an upheaval in their business, increased bookkeeping hire, expensive installation costs—and because they cannot realize the great advantage they would gain through accurate knowledge at all times of their business condition.

It does mean an upheaval in business—the substituting of confidence for anxiety and fear. It means smooth, orderly running instead of confusion; it means accurate information instantly available on the books instead of a mass of unanswered questions and jumbled details carried in the head.

It means better credits, discounted bills, prompt collections, knowledge of profits on jobs or sales as soon as made and the stopping of losses and leaks on others before they wipe out the profits. It means knowing the assets of the business at all times instead of waiting for an inventory, therefore better buying; and a knowledge at any time of the work in progress, both labor and materials, for closer watchfulness of jobs and therefore greater profits. And it means records of the business as guide posts for future business.

The Standard Accounting System of the Association of Electragists is "standard" because it represents the combined study of electrical contractor-dealers, jobbers, manufacturers, credit men and the trade press in its prepara-

tion; because it was officially adopted six years ago as the most practical system for electrical contractors and contractor-dealers by the Association; and because it has stood the test of six years' use by hundreds of users as being a complete, practical system for the electragists' business.

The Standard Accounting System is a *complete* system and does not require the experimenting of public accountants to devise some special forms to fit your business. The Standard Accounting system *fits* your business because it was made to do that. If you have an accountant install it don't let him change it—as it is it represents the best thinking of the best accountants experienced in our business to make it complete, simple and practical. It is important that your system be "standard" that your figures may be uniform and comparative with the rest of the industry.

The Standard Accounting System includes all of the forms and books needed, from the handling of your jobs to the trial balance of your business; It costs all jobs and sales; provides a merchandising account that shows your stock on hand at any time; vouchers liabilities so that each month makes its true showing; provides a sales recapitulation sheet that shows at a glance the profit or loss on each job or sale by the week or month; automatically balances your cash books by your check book at any time; gives you sure, accurate knowledge of your overhead; and it provides you a summary of operations that gives you confidence and courage in your undertakings.

The cost of the Standard Accounting System installed in your business is only a very small percentage of its value to you through every year thereafter. Its installation has been the turning point to success by many concerns in the past six years; what it has done for them it will do for you.

Laurence W. Davis

ORGANIZATION ACTIVITIES

STATE CHAIRMEN AND SECRETARIES

State	Chairman	Secretary	State	Chairman	Secretary
Ontario, Canada:	Harry G. Hicks, 203 Church St., Toronto	J. A. McKay, 24 Adelaide St., W., Toronto	Maryland:	A. C. Brueckmann, Keyser Bldg., Baltimore	C. Philip Pitt, 7 St. Paul St., Baltimore
British Columbia:	S. E. Jarvis, 570 Richards St., Vancouver	R. A. Graham, 929 Pender Street, W.	Michigan:	Henry Roseberry, 41 Pearl St., Grand Rapids	H. J. Shaw, 613 Lincoln Bldg., Detroit
Colorado:	J. Fischer, 213 15th St., Denver	H. Alex Hibbard, E. & C. Building, Denver	Missouri:	A. J. Dunbar, Frisco Bldg., St. Louis	G. E. Haarhaus, St. Louis
Connecticut:	Tryon Smith, 247 State St., New London		New Jersey:	Geo. E. Davis, 23 Central Ave., Newark	
District of Col.:	Frank T. Shull, Elliott St., Washington	H. R. Harper, 635 D St., N.W., Washingt'n	New York:	F. A. Mott, 29 St. Paul St., Rochester	H. F. Janick, 29 St. Paul St., Rochester
Florida:	Preston Ayers, Orlando	L. D. Little, Orlando	N. & S. Carolina:	N. L. Walker, Raleigh	F. E. Robinson, Charlotte
Indiana:	T. F. Hatfield, 102 S. Meridian St., Indiana's	A. I. Clifford, 507 Odd F. Bldg., Indianapolis	Ohio:	C. L. Wall, 212 S. Main St., Akron	Walter R. Keefer, 939 E. McMillan St., Cin'nati
Iowa:	Louis L. Corry, 510 Brady St., Davenport		Pennsylvania:	R. W. Keck, Allentown	M. G. Sellers, 1518 Sansom St., Philadelphia
Kansas:	C. S. Smallwood, 1017 N. 5th St., Kansas City	Arthur Tucker, 619 Jackson St., Topeka	Tennessee:	P. W. Curtis, Chattanooga	J. A. Fowler, 118 Monroe Ave., Memphis
Louisiana:	Robley S. Stearnes, 624 Carondelet St., N. Orleans	I. G. Marks, 406 Mar. Bk. B., N. Orleans	Wisconsin:	L. W. Burch, 202 E. Wash'n Av., Madison	H. M. Northrup, 25 Erie St., Milwaukee

LIST OF LOCAL ASSOCIATIONS AND MEETINGS

STATE AND CITY	LOCAL SECRETARY	STREET ADDRESS	TIME OF MEETING	PLACE OF MEETING
ALABAMA				
Birmingham	J. R. Wilcox	313 North 19th St.	Tuesday 10 a. m.	
ARIZONA				
Phoenix	E. A. Cummings,		Tuesday 4 p. m.	Builders Exchange
CALIFORNIA				
Anaheim	Mr. Waite		Each Week, Friday	
Berkeley	J. M. Gregory	Oakland	Friday 8 p. m.	Oakland
Covina	F. Rambo		1st & 3rd Monday	Ontario
Fresno	Clyde F. Smith	1162 Broadway	Tuesday Evening	Comm. Club
Long Beach	A. H. Rosenberg	So. Cal. Electric Co.		Municipal Club
Los Angeles	Irvin C. Bruss	118 East 3rd St.	Tuesday 8 p. m.	Pacific Building
Oakland	J. Gregory	Pacific Building	12 Noon, Thursday	States' Cafe
San Francisco	E. E. Browne	320 Call Building		Cham. Com. Bldg.
South Pasadena	J. Jacobs	1128 Mission Street	Tuesday 6:30 p. m.	Pin Ton Cafe
Van Nuys	Los Angeles Ass'n.			
COLORADO				
Denver	Alex. Hibbard	E. & C. Building	2d & 3rd Tuesdays	E. & C. Building
Manitou			Friday Nights	Col. Springs
Pueblo	H. Ashcraft		2nd Tuesday	Commerce Club
CONNECTICUT				
Hartford	A. A. Angello		First Tuesdays	Hotel Bond
New Britain	F. Mulvehill			
Waterbury	D. B. Neth	Conn. Light & Power Co.	2d Tuesday Evening	Builders Exchange
DISTRICT OF COLUMBIA				
Washington			2d Thursday	Dewey Hotel
FLORIDA				
Jacksonville	M. A. Ladd	Stinson Electric Co.	1st Tuesday	108 W. Bay Street
Miami	C. E. Pullen	Pullen-Zohl Co.		
GEORGIA				
Atlanta	W. C. Drake	Ga. Ry. & Power Co.	12:30 Friday	Dafodil Res.
Savannah	Sylvan M. Byck	141 Bull Street		
ILLINOIS				
Chicago	J. W. Collins	179 W. Washington St.	4th Wednesdays	11 S. Lasalle St.
Master Contr. Ass'n.	F. J. Boyle	31 West Lake St.		
Decatur	E. O. Weatherford	114 E. William St.	1st Wednesday	Y. M. C. A.
Springfield	C. A. Meadow	107 E. Adams St.		
East St. Louis	C. F. Broderick	317 E. Broadway	Saturday 2 p. m.	Arcade Building
La Salle	Edward Blaine		1st & 2nd Tuesday	Post Hall
Quincy	John Harbison	18th & Broadway	2d & 4th Wednesday	214 1/2 No. 6th Street
Rock Island	John Weisher	613 Tyler Street	Monthly	
Streator	William Schroder			
INDIANA				
Evansville	I. A. Welburn	404 Main Street	Every Friday	Y. M. C. A.
Gary	A. B. Harris	570 Washington St.	1st and 3rd Tuesdays	Chamber of Commerce
Indianapolis	R. E. Snyder	704 N. Alabama St.	2d & 4th Monday	Labor Hall
Peru	J. B. Johnston	West 5th Street	1st Tuesday	B. & T. Ex. Building
South Bend	Mr. Moran, Jr.	832 N. St. Louis	1st Thursdays	Asso. Bldg. Cont.
Warsaw	Carnoy Chess	523 Ohio St.	Wednesday Evening	
IOWA				
Davenport	Louis F. Cory	120 E. Market St.	Monday 6 p. m.	Chamber Com.
Sioux City	F. H. Abbott		Monday 6 p. m.	Jackson Hotel
Waterloo	H. L. Hileman			
KANSAS				
Salina	Geo. H. Shank	600 Bluff Street		
Topeka	H. S. Lee	146 S. Santa Fe Ave.	1st Thursday	Elks' Club
Wichita	L. A. Harris	816 Kansas Ave.	Monday Noon	United Elec. Co.
KENTUCKY				
Louisville	Chas. Daubert	446 North Main	Every Tuesday 7:30	
Paducah	W. R. Kitterjohn	921 S. Third St.	2d, 4th Thursdays	B. of T. Building
LOUISIANA				
New Orleans	S. J. Stewart	581 St. Joseph St.	2 p. m. Monday	612 Gravier St.
Shreveport	Percy Elliott	Elliott Elec. Co.	Every Monday	
MAINE				
Portland	Lyman P. Cook	12 Free Street	On Call	Graymore Hotel
MARYLAND				
Baltimore	George Robertson	Park Bank Bldg.	2d and 4th Thursdays	Soathem Hotel
MASSACHUSETTS				
Fitchburg	R. M. Gowell		1st Monday	Fay Club
Haverhill	H. W. Porter	24 West St.	2nd Monday	El. Light Station
Newton	Harry J. Walton,	Malden Elec. Co.	Monthly	Malden Elec. Co.
Springfield	C. L. Howe	897 Washington St.	2d Monday ea. month	Various Places
West Medford	Mr. Ayers	103 Rochelle St.	Monthly	Chamber of Comm.
Worcester	H. J. Walton	Malden Elec. Co.	2d Thursday	Various
MICHIGAN				
Battle Creek	J. W. Coghlin	259 Main St.	Every other Tuesday	44 Front Street
Detroit	H. Shaw	613 Lincoln Building	Last Thursday	Post Tavern
Flint	J. Markle	718 S. Saginaw		G. A. R. Hall
Grand Rapids	Henry Romyn	40 Ionia Av., N. W.	Tuesday Noon	Association of Com.
Kalamazoo	M. Randall	Exchange Place		Chamber Commerce
Saginaw	E. T. Eastman	209 Brewer Arc.		

THE ELECTRICIST ORGANIZATION ACTIVITIES—(Continued.)

STATE AND CITY:	LOCAL SECRETARY	STREET ADDRESS	TIME OF MEETING	PLACE OF MEETING
MINNESOTA				
Duluth	D. Ehlert	210 W. 1st St.	Subject to Call	Builders' Exchange
Minneapolis	W. I. Gray	511 S. Third St.	2d & 4th Monday	Elk's Club
St. Paul	E. Hoseth	993 Selby Avenue	2d & 4th Tuesday	
MISSOURI				
Kansas City	A. S. Morgan	4 E. 43d Street	6:30 p. m.	University Club
St. Louis	E. Bowman	644 Century Building	2d and 4th Tues.	American Hotel
NEBRASKA				
Lincoln	G. G. Kingham	142 S. 12th Street	1st & 3rd Monday	C. of C. Building
Omaha	E. H. Brown	1818 Harvey St.	2d and 4th Thursdays	Builders' Exchange
NEW HAMPSHIRE				
Portsmouth	F. C. Hatch	Kittery	2d & 4th Wednesdays	
NEW JERSEY				
Atlantic City	F. P. Wright	16 Ohio Ave.	1st Thursday	Malatesta Hotel
Jersey City	Wm. Doellner	843 Bergen Ave.		P. S. Building
Long Branch	Chas. Maggs	462 Bath Ave.	1st & 3rd Mondays	Commercial Hotel
Newark	John J. Caffrey	435 Orange St.	1st Monday	283 Plane St.
Paterson	H. M. Desaix	88 Ellison St.	Last Friday	P. S. Building
NEW YORK				
Albany	E. A. Stephens	71 Trinity Place	3rd Thursday	Pekin Restaurant
Binghamton	A. H. Hyle			
Brooklyn	H. F. Walcott	Pacific St. and 3d Ave.	1st & 3rd Wednesdays	Johnston Building
Electric Club	A. Stone	503 Myrtle Ave.		
Buffalo	E. P. McCormick	55 Washington Street	Fridays	507 Elec. Building
Cooperstown	B. B. St. John	Oneonta	3rd Tuesday	Vanon
Endicott	A. H. Hyle	Binghamton	Tuesdays	Chamber Commerce
Glens Falls	W. F. Coombs	21 Main Street, S.		
Jamestown	Henry Lund	309 Main Street	3rd Monday	Manufacturers Ass'n.
Kingston	M. C. Rivenberg			
Nassau-Suffolk	Edwin M. Seaman	Mineola		
New Brighton	E. L. Taylor	Tottenville		
N. Y. Section, No. 1	J. W. Hooley	45 Barclay Street	1st Thursday	Building Trades
Independent	Albert A. A. Tuna	127 East 34th St.	2nd and 4th Wednesdays	226 W. 58th St.
Section No. 3	L. F. Lueddecke			
Olean	H. C. Thuerk	Olean L. & P. Co.	Monthly	Various Stores
Oneonta	B. B. St. John		3rd Thursday	Eggleson Hotel
Rochester	H. F. Janick	29 St. Paul Street	1st and 4th Mondays	Saratoga and Glens Falls
Saratoga Springs	W. F. Camp	So. Glen Falls	2d and 4th Thursdays	
Schenectady	Mr. Spengler	McClellan St.	Subject to Call	
Syracuse	H. N. Smith	P. O. Box 809		
Tottenville	W. Taylor	Tottenville, S. I.	1st and 3rd Thursdays	St. George, S. I.
Troy	H. W. Boudry	First Street	1st Tuesday	Gas Office
Utica	W. C. Balda	228 Genesee Street	1st Tuesday	Elk's Club
Watertown	L. B. Smith	Roth Block	3rd Fridays	Utilities Building
Woodmere	Geo. La Salle	Westbury		
Yonkers	Mr. Mayer	Manor House Sq.	Monthly	
OHIO				
Akron	Harvey Uhl	211 Water Street	Alternate Thursdays	2nd Nat. Bank Bldg.
Bellaire	J. Blumberg	Bellaire	Call of Secretary	Bellaire
Canton	H. S. Hastings	Industrial Corporation	1st Tuesdays	Industrial Com.
Cincinnati	W. R. Keefer	939 E. McMillan	Tuesday 3 p. m.	Chamber of Com.
Cleveland	Frank Monahan	1761 East 12th Street	1st and 3rd Thursdays	Hotel Statler
Columbus	A. G. Sims	Sims Elec. Co.	2nd Wednesdays	Bldrs. Exchange
Dayton	Clarence Carey	1107 Bron Ave.	2d & 4th Mondays	Builders' Exchange
Springfield	M. H. Gray		On Call	Various
Steubenville	D. C. Hartford	16 Huron Bldg.	1st Wednesday	Nat. Exchange Bank
Toledo	J. Kelly	Builders' Exchange	Every Wednesday 8 p. m.	16 Huron Building
Youngstown	F. F. McBride		Monday Noon	Y. M. C. A.
OKLAHOMA				
Tulsa	C. W. Cowan	Masonic Bldg.	Every Monday	Masonic Bldg.
OREGON				
Medford	S. C. Clark	Cal. Ore. & Power Co.	3rd Monday	
PENNSYLVANIA				
Allentown	(See Bethlehem)			
Bethlehem	A. W. Hill	500 Main Street	Last Thursday	At call of President
Catasauqua	(See Bethlehem)			
Dubois	C. E. Blakeslee		Monthly	
Easton	(See Bethlehem)		Monthly	
Erie	Earl Stokes	Builders' Exchange		Builders' Exchange
Lancaster	A. Deen	434 S. Sheppen	3rd Friday	Underwriters Office
Philadelphia	M. G. Sellers	1518 Sansom St.	2nd Thursday	1716 Arch St.
Pittsburgh	Fred Rebels	4th Avenue	1st Thursday	4th Avenue
Scranton	A. J. Fowler	Board of Trade Bldg.	Tuesdays	Zenke's
St. Marys	C. E. Blakeslee	Dubois	Mondays	
Wilkes-Barre	Ambrose Saricks	Penn. Pr. & Lt. Co.	Tuesday Evenings	Penn. Pr. and Lt. Co.
York	A. E. Harris	E. King Street	2d & 4th Tuesdays	
RHODE ISLAND				
Providence	Herbert C. Hill	35 Westminster Street	1st Thursdays	
SOUTH CAROLINA				
Charleston	J. P. Connolly	Cons. Ry. & Light'g Co.		
Columbia	E. L. Cashion	Sumter, S. C.		
Greenville	E. C. DeBruhl	Ideal Electric		
TENNESSEE				
Chattanooga	Carl Schnider	412 Kirby Avenue	Wednesday	Manhattan Cafe
Knoxville	H. M. Moses	615 Market Street	Noons	Railway Light Co.
Memphis	H. A. Street	285 Madison Av.	Monthly	Allyn Cafe
Nashville	J. Shannon	8 Ave. and Church	Every other Wednesday	Tribune Hotel
TEXAS				
Dallas	H. A. Brewster	409 S. Eway	On Call	409 So. Eway
El Paso	R. S. Murray	1515 No. Campbell	Ev. Tuesday	303 Martin Building
UTAH				
Salt Lake City	Gus. Forsberg	69 E. 4th South	Wednesday 12:15 p. m.	Newhouse Hotel
VIRGINIA				
Lynchburg	Irby Hudson	Hudson-Morgan Elec. Co.	1st Thursdays	Piedmont Club
Norfolk	K. D. Briggs	Arcade Building	Wednesdays	Chamber of Commerce
Richmond	W. A. Cutlett	Jefferson and Grace Sts.		
WASHINGTON				
Seattle	Rush McCarger	3rd and Madison St.	Thursdays	Elk's Club
WISCONSIN				
Green Bay	John B. Tingley	223 Cherry St.	1st Thursday	Nicolet Building
Madison	Otto Harloff	602 State St.	Wednesdays	Asso. of Com.
Milwaukee	Walter F. Baumann	156 5th Street	1st Monday each Month	456 Broadway
Racine	F. H. Patrick	1545 W. Boulevard	1st Tuesday	Racine Building
CANADA				
Calgary	E. W. Beard	The Gringer Co.	Bi-weekly	Christie Elec. Co.
Guelph	W. E. Lemon	clo N. Electric Co.	2d and 4th Monday	
Hamilton	K. J. Donoghue	clo Doerr El. Co.		
Kitchener	O. S. Leyes	65 McGill College Ave.		
Montreal	G. C. L. Brassart	128 Osgood St.		
Ottawa	A. C. McDonald	Electric Shop	Monday 8:00 p. m.	Elec. Inspection Office
St. Catherine	A. J. Desand	24 Adelaide St.	1st and 3rd Wednesday	Chamber Commerce
Toronto	J. A. McKay	2427 Granville St.	2nd Tuesday	Board of Trade
Vancouver	J. F. Hutchinson	609 Moy Ave.	Every Tuesday	425 Pacific Building
Windsor	A. H. Cook	General Elec. Co.	2d and 4th Thursdays	Notre Dame Building
Winnipeg	R. N. Elgar	609 Moy Ave., W.		
Niagara Peninsular	W. H. Mackenzie			

Executive Committee Meeting

This month the Executive Committee of the Association of Electragists will hold its midyear meeting. Members of the committee representing the eleven divisions of the organization will meet at the Building Trades Club, 34 West 33rd Street, New York City, at 10 o'clock on the morning of Monday, March 17.

Previous to last year such meetings were held at the Headquarters offices, but it was deemed advisable not to interfere with the regular routine of business there. The Building Trades Club offered desirable meeting rooms, and this year's meeting will be held at the same place.

There probably will be three sessions—morning, afternoon, and evening, all of which will be open meetings. Make a note of the time and place—Monday, March 17, at The Building Trades Club, 34 West 33rd Street, New York City.

Convention in New York City

Eastern Division of the A. E. I. Will Meet at Hotel McAlpin, March 18

Arrangements have been completed for the convention of the Eastern Division of the Association of Electragists to be held at the Hotel McAlpin erroneously announced in the trade press as the Hotel Astor, in New York City on March 18.

This date follows the midwinter meeting of the International Association's Executive Committee, which is to be held the day before at the Building Trades Club, as announced elsewhere.

This Divisional Convention affords members the opportunity of meeting Executive Committeemen from various parts of the United States and Canada, and an exchange of experiences cannot help to work for the betterment of all parties concerned.

An interesting program has been prepared for the occasion. The morning will be given over to the labor sections of the organization, the general session of the convention being called at two o'clock in the afternoon. All meetings will be held at the McAlpin Hotel, which is conveniently situated at the corner of Broadway and 34th Street.

A feature of the convention will be the evening's entertainment, which is to be known as "Ladies' Night." First comes a reception to which the ladies are invited, followed by a get together

dinner which also will be specially attractive to the ladies, and then there will be dancing, and this being leap year, of course the ladies will have an opportunity of choosing their partners. The program follows:

Morning

- 10 A. M.—Union Shop Section, Eastern Division, 2nd Mezzanine, Hotel McAlpin. L. K. Comstock, Chairman.
- 10 A. M.—Open Shop Section, Eastern Division, 2nd Mezzanine, Hotel McAlpin. Joseph G. Crosby, Chairman.

Afternoon

- 2 P. M.—Convention Session—Ball Room, Hotel McAlpin. President James R. Strong, Presiding. Merchandising Policy Committee Report. W. Creighton Peet, New York City, Chairman of Trade Policy Committee. The Electragist, Joseph G. Crosby, Philadelphia, Chairman of Publication Committee. National Electrical Code, A. Penn Denton, Kansas City, Chairman of A. E. I. Code Committee. Cooperation in California, Clyde L. Chamblin, San Francisco, Pacific Division Executive Committeeman. Cost Data and Statistical Work of the Association, Laurence W. Davis, General Manager Association of Electragists.

Evening—Ladies Night

- 6:30 P. M.—Reception for all electrical men and their ladies—Winter Garden, Hotel McAlpin.
- 7 P. M.—Dinner Dance (\$5 per cover). Afterdinner speakers: Joseph A. Fowler, Memphis, Tenn., Executive Committeeman from Southern Division. Frank W. Smith, New York City, Vice President and General Manager United Electric Light & Power Co.; Past President National Electric Light Association. Dancing—Hotel McAlpin Orchestra.

It will be noted that the program for the convention session is particularly interesting. One of the problems of the contractor-dealer is the question of what the electrical industry will allow him in the way of compensation for his service to the public. There must be adequate allowance for sales effort and each branch of the industry is entitled to its share; but the contractor-dealer sometimes is doubtful if the present division is equitable. The report of the Trade Policy Committee will bring out some points that will tend to clarify this subject.

The Pacific Coast representative will offer some constructive thoughts on co-operation; the Publication Committee chairman will submit some suggestions for consideration; and other speakers will be equally entertaining—including the two notable talkers at the dinner.

Everybody is invited to attend this convention. All sessions are open and everyone who is interested will be welcome. Don't forget the date—March 18, at the Hotel McAlpin, New York City.

Will Visit Headquarters

A delegation of lighting experts from abroad, organized and conducted by the British Thomson-Houston Company, has been taking in points of interest in the United States since the middle of January, collecting information which will be useful to the industry in Europe.

On March 3, the delegation will visit the offices of the Association of Electragists in New York City. Secretary Davis will acquaint the visitors with the workings of the International Association, explaining the part that organization takes in the electrical industry.

The itinerary of the European delegates was arranged by the International General Electric Company, and after having taken up about three months' time in visiting points of interest, they will sail from New York on March 6.

From the Code Chairman

A. Penn Denton Asks Those Who Have Not Done So to Report

To members of the Association of Electragists who have received the January Bulletin and Questionnaire sent out by your International Code Committee, I appeal to you who have not answered to do so promptly, as the Committee desires to complete the collection and tabulation of this data as early as possible.

Your Code Committee desires to take this opportunity of expressing sincere appreciation of the prompt response to our questionnaire, which resulted in very careful answers to all questions asked, by a very representative part of our membership. To date 334 replies have been received from 42 states and 212 cities in the United States, as well as replies from five provinces and 12 cities in Canada.

There still are many good sized cities and towns in the United States where we have members from whom we have not heard, and to permit your Committee to obtain data which will be of maximum benefit to our membership in the formation of local committees, we should have just as near a 100 percent response from our membership as is possible.

Your Code Chairman wishes to ask

the patience of those loyal members who have so promptly sent in their questionnaire, in awaiting the time when I can properly acknowledge those received and give aid where that is necessary in the organizing of local groups. In due time, and that just as promptly as is possible, you will hear from your Code Chairman.—(Signed) A. P. D.

Long Beach Club Active

Present and Future Plans Include Work of Far Reaching Value

According to a report from the Joint Committee for Business Development the Electric Club of Long Beach, California, is working extensively to better electrical conditions locally. A similar program should prove equally profitable to electrical interests in developing interest and promoting business in other communities.

A definite aim of this club has been to install in the minds of contractor-dealers the value of upholding high standards in all branches of their work, and the crystalizing of a spirit of co-operation between electrical contractors and general building contractors. Various subjects have been taken up at the regular meetings to further this aim.

Planned activities are under way for the future, and one of the first things to be done is to exhibit an electric home. Revision of the local electrical code is considered important. Taken all in all the work of this club is thought to be more in the nature of learning how to apply electricity most effectively to daily uses, rather than the business of selling. A letter from A. L. Ferver of Long Beach, who is actively connected with the club, told of its work in quite some detail and is printed for the benefit of others who may wish to adopt similar plans. It read as follows:

The club was organized for the purpose of creating interest in the use of electrical equipment; to stimulate a desire on the part of electrical contractors to set a high standard of construction and selection of equipment in their work; to promote co-operation between electrical contractors and city officials; as well as harmony between electrical contractors and general building contractors; and in every way possible to increase the acquaintance among men engaged in the electrical business in our city and bring to the attention of the residents the important position of this line of work in our everyday lives.

In order to do this work most successfully, we have taken up in our meet-

ings various subjects of electrical work such as convenience outlets in residential buildings, interior illumination, display window lighting, ornamental street lighting, standard methods of construction, and similar matters that affect the everyday work of the average contractor. In addition to this we have had speakers, familiar with their subjects, to lecture on these subjects and also to give historical sketches of the development of the electrical industry, more particularly as applied to power development in the section west of the Rocky Mountains. In this way a great deal of interest has been created, and sociability has been fostered by always furnishing at our meetings some light entertainment in the way of music, elocution, or something of that sort.

To show the ramifications of the electrical work, one of our members is a doctor of medicine and a thorough student of therapeutics. He has given us one or two very excellent lectures on the subject of electricity as applied to modern therapeutics. These lectures created a great deal of interest and have shown our members how wide the field is in which they are working.

As to our future plans, we have had in mind the establishment of an electrical home in Long Beach. Perhaps our most important work for the immediate future is the revision of the electrical code of the city of Long Beach. This code is now in process of preparation, and as soon as the first draft has been made, it will be submitted to the club for thorough discussion at regular club meetings. We will go through the ordinance paragraph by paragraph and solicit from the members criticisms and suggestions that will

not only familiarize them with the text of the ordinance, but will give us the benefit of the best opinions from local men as well as regulations of the State Accident Commission, as set forth in the Electrical Safety Ordinance and other national codes.

You will see from what I have mentioned that we are really a working club, not so much interested in the business of selling as in the business of learning the most modern methods of construction and the latest applications of electricity to the need of everyday life.

Western Inspectors Meet

Three Day Session at Omaha, Nebraska, Largely Attended

The nineteenth annual meeting of the Western Association of Electrical Inspectors was held at Omaha, Nebraska, on January 29, 30, and 31, with a larger attendance than at any previous meeting. Secretary Wm. S. Boyd of Chicago reports that there were more than two hundred inspectors present from thirty-eight different states, including a number from Canada. In addition there were a hundred other electrical men present, including A. Penn Denton of Kansas City, who is the Association of Electragists' executive committee code chairman.

An interesting program was carried out during the three days of the convention. By far the greater part of the time was devoted to a careful reviewing of the latest edition of the National Electrical Code. The discussion was taken up according to the work of the ten standing committees, and either the regular standing committee chairman of the Electrical Committee was there



Twentieth annual banquet of Independent-Associated organization of New York City held at Hotel Astor on January 23, at which new officers named in February issue were installed. L. L. Strauss was toastmaster, and among prominent speakers were Walter Neumuller, secretary of the New York Edison Company; H. S. Wynkoop and Joseph Forsythe, respective heads of city and insurance inspection departments; Walter Drury of the Western Electric Company; Theodore Joseph, who told how a contractor could become a dealer and vice versa; and Charles L. Eidlitz, who had the lights turned off while he went into a trance and related a vision of the future

Apex

ELECTRIC SUCTION CLEANER

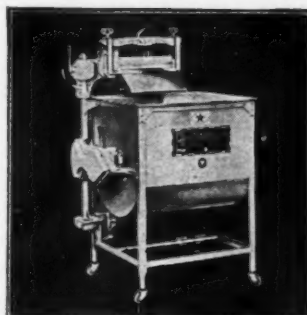
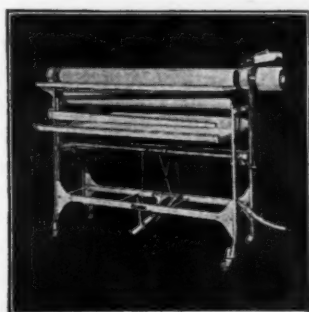
Take the Waste Out of Your Selling Costs

If you ever stop to figure the cost of handling separate appliances of several makes as against a single complete line of national recognition, you will not be long in deciding what to do.

When you know the truth, when you realize the savings you can make by handling a complete line—the Apex-Rotarex line—you won't wait to write; you'll wire.

This information is yours for the asking. Why not do it today?

There Is an Advantage in Handling the Apex-Rotarex Line



You Can Accept Your Customer's

Old Cleaner in Part Payment for a New Apex

Our new TRADE-IN OFFER opens up to you a big new market—the hundreds of housekeepers in your territory whose old cleaners, because of accident, neglect, long service or poor quality are worn out. Act quickly. Cash in on this big opportunity. Send for details now.

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to answer questions and discuss this particular part of the revision work, or where the chairman could not be present, the subject was handled by a vice chairman, one of the members of the committee. Every chairman in charge of the Code discussion went to the meeting well prepared, having previously reviewed the changes he was particularly responsible for. This made the discussions unusually lively and permitted all inspectors raising questions to be given prompt and satisfactory answers.

The two Code subjects which provoked the greatest amount of discussion were the rules under grounding, and the branch circuit rule of Mr. Denton's committee. The grounding discussion occupied three hours of one day, while the branch circuit rule took almost as long, and the discussion finally ended by a resolution being passed by the assembled convention which indicated that a great majority of the inspectors were not satisfied with the rule as it has been left. The resolution called for the appointment of a committee of the Western Association to make definite observations during the coming year, particularly with regard to placing some definite wattage limit on new branch circuits—either a flat amount such as 1,000 watts or a variable amount based on a certain number of watts per square foot of floor area for different classes of buildings.

Mr. Denton made an address in which he urged that the National Electrical Code be supported by a united electrical industry, which would include inspectors and all kindred interests. Mr. Denton's talk is published on another page of this issue.

Clarifying Specifications

Report of Committee Appointed by New York Board of Trade

After discussing the question of specifications for some time, a sub committee from the Electrical Board of Trade of New York unanimously adopted a resolution, which it broadcasts to architects, engineers, and general contractors.

The sub committee was composed of six consulting electrical engineers and seven electrical contractors. L. K. Comstock, an electrager of New York City, was the chairman. The resolution follows:

RESOLVED: That the Committee consisting of engineers and contractors appointed by Commissioner Eidlitz make

the following recommendations to the Commissioner:

That temporary lighting should not be included in contract requirements.

That the painting of exposed conduit, panel trim, etc., should not be included in contract requirements.

That the overtime frequently necessitated in concrete construction, cannot be covered by contract requirements.

That feeder and main wire and cable sizes should always be clearly indicated on drawings.

That the number of panels and number of circuits on each be clearly shown on drawings, or listed in specifications, all of which information shall be transmitted by the contractor to the manufacturer.

The switch and receptacle plates by contract requirements should be only of the manufacturers' standard finishes and of a thickness, minimum 060, unless otherwise distinctly specified.

That cross sections and details of construction should be furnished wherever practicable for estimating purposes, particularly where there is an unusual condition affecting the electrical work.

That engineers and contractors recognize the principle that the payment of overtime under many conditions does not make a proper compensation to the contractor.

That when unit prices seem desirable such unit prices shall be made for material only. The labor applied to such units shall consist of the actual labor expended upon them, at an agreed price per hour.

That architects' and engineers' specifications should be reasonably explicit in covering all contract requirements, and that general phrases are to be considered as covering only such items as are reasonably implied in the specifications for electrical work.

Electric Sign Show

The annual Electric Sign show of the New York Edison Company will be held during the week of March 8 at the company's main showroom in New York City. Leading manufacturers of electric signs and sign accessories have been invited to take part, and according to E. A. Mills, manager of the Edison Company's electric sign bureau, the exhibit promises to be comprehensive.

This is one of a series of specialized electrical shows arranged by the Edison Company. There is no charge to the exhibitors for space and there is no charge for admission.

New Association Formed

A new organization of electrical contractor-dealers was recently formed in Hartford, Connecticut, known as the Hartford Electrical Contractors Association. The original membership is composed of twelve electrical contractor-dealers, who only are eligible to join and half of that number are electragerists.

Regular meetings are held on the first Tuesday of each month at the Hotel Bond in that city, and special meetings are subject to the call of the president when authorized by the executive committee. The officers are as follows: President, H. Bishoff; vice president, W. M. Gilbert; treasurer, T. A. Stewart; secretary, A. A. Angello; and sergeant at arms, J. Castonguay.

Among the initial activities of the new Association is the launching of a cooperative advertising campaign through which it is hoped to develop much new business for the members.

Annual Meeting of S. E. D.

The annual meeting of the Society for Electrical Development was held at headquarters in New York City on February 5, and was followed by the semi-annual meeting of the board of directors.

The following directors were elected for a period of four years: W. W. Freeman, representing central stations; H. D. Shute, representing manufacturers; Geo. E. Cullinan, representing jobbers; Paul H. Jaehnig, representing contractor-dealers.

The directors elected the following officers for 1924: President, W. W. Freeman; vice-presidents, Fred Bissell, J. Robt. Crouse, Geo. F. Morrison, James R. Strong and J. E. Montague. The directors also elected from their number the following executive committee for the current year: Charles L. Edgar, chairman; J. E. Montague, Geo. F. Morrison, H. D. Shute, Fred Bissell, Geo. E. Cullinan, James R. Strong, Walter H. Morton, J. Robert Crouse, E. W. Rockafellow, W. W. Freeman, Exofficio.

This meeting was the first held in the new board room which forms part of an additional suite of offices taken over by the Society. A very effective display of the material produced by the Society during 1923 was exhibited so that the members attending the annual meeting and the directors might have visual evidence of the amount of work accomplished.



Color-Ray No. 66 shown above attached to an X-Ray Reflector with Color Slide inserted.

Above—X-Ray Show window Footlights. Left—No. 33 FLOOD-RAY "With Center Spot Beam."

Can You Answer Bill Jones' Questions on Lighting?

BILL JONES owns a store near you. Suppose that you tell him he needs some good X-Ray window lighting effects for his Spring displays. He might ask you—"What's the matter with the lighting I've got now?"

Can you *tell* him in a few words what is the matter?

That's when our new book "Store Lighting with X-Ray Reflectors" comes in handy. This book is a regular hand-book on store lighting. It covers completely the problems of show window, show case, and interior store lighting.

Such a book as this is what you need. It is an authority on lighting. With this book you will feel equipped to go to Bill Jones' Store and show him that you are an authority on these problems.

Write for the book today in time to get the Spring business. Use the coupon.

Curtis Lighting, Inc.

A Grouping of
NATIONAL X-RAY REFLECTOR CO. X-RAY REFLECTOR CO. OF NEW YORK INC.
LUMINAIRE STUDIOS INC.

31 W. 46th St.
New York

1129 West Jackson Boulevard
Chicago

Pacific Finance Bldg.
Los Angeles

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"We Harness Light"

That is the purpose of the newly formed organization which is known as Curtis Lighting, Inc.

This organization is a grouping of three separate companies under the personal direction of Augustus D. Curtis whose picture together with that of our newly completed building is shown above.

Curtis Lighting, Inc. is a grouping of the National X-Ray Reflector Co., X-Ray Reflector Co. of N. Y. Inc. and Luminaire Studios, Inc.



CURTIS
LIGHTING,
Inc.

1129 W. Jackson Blvd
Chicago, Illinois

Gentlemen: Send me a copy of your serial 393, "Store Lighting with X-Ray Reflectors." I want to learn more about store lighting effects.

The management read a complete report of the coöperative relations that had been established with other organizations during 1923; gave a resume of the progress of the commodity programs, and outlined the work contemplated for the current year.

Convention Dates

A catalog of convention dates supplied by the Society for Electrical Development for the months of March and April is as follows:

March

Electrical Supply Jobbers Assn., San Francisco, Calif.

3—New England Div., N. E. L. A., Merchandising Bureau, Boston, Mass.

11-13—Oklahoma Utilities Association, Oklahoma City, Okla.

12-14—Electrical Exposition, Bangor, Maine.

18—Association of Electragists, Eastern Division Convention, Hotel McAlpin, New York City.

18-19—Illinois State, Electric & Railways Associations, Chicago, Ill.

26-27—Illinois State Electric Association, Hotel Sherman, Springfield, Ill.

27—Inter American Electrical Communications Conference, Mexico City, Mexico.

April

Electrical Credit Association of Pacific Coast.

Middle-West Div. N. E. L. A., Kansas City, Mo.

7—New England Div., N. E. L. A., Merchandising Bureau, Boston, Mass.

10-12—Missouri Assn. of Pub. Utilities, Kansas City, Mo.

17-18—Wisconsin Utilities Assn., Hotel Pfister, Milwaukee, Wisc.

22-25—Southwestern Public Service Association, Geographic Division of N. E. L. A., New Orleans, La. (Joint meeting with Southwestern Public Service Association).

A Story With a Moral

In relating his experiences to the editor, a friend of THE ELECTRAGIST writes:

"While sitting in an electrical contractor's office today, I overheard him give a quotation to a customer on a home wiring job. The work was to be knob and tube with BX service, safety switch, 9 ceiling lights, 9 single pole switches, and 2 baseboard receptacles. The figure quoted was \$40.

"After the prospective customer left, I asked the contractor why he didn't use the A. E. I. House Wiring Manual to make estimates. Without replying he looked up the Manual and together we sat down and figured that same \$40 job. The prime cost—just labor and material—figured exactly \$48.67.

"You can imagine the contractor's surprise—and joy at discovering how to figure the right way. But he was good enough sport to acknowledge his mis-

take, and he told me he would take the matter up and recommend the use of the Manual at the next meeting of his local association."

Moral: When in doubt, use the House Wiring Manual; or better still, always use it and never be in doubt.

Purchases Supply Business

The Hudson Electrical Supply & Equipment Company of Jersey City, New Jersey, has been purchased by O. Fred Rost, who heads the Newark Electrical Supply Company at Newark, New Jersey. Mr. Rost will act as president



O. Fred Rost

and general manager of the newly acquired organization.

Mr. Rost, who has taken an active part in the work of the electrical supply jobber and the electragist for a number of years, and who is well known in electrical circles in the east, advises that he expects to operate the Hudson Company as a first class electrical supply jobbing house, pursuing a policy which is in harmony with the highest standards of business practice and in accord with the best ethics of business.

The Hudson Company he says will carry a complete stock of high grade electrical materials and will have several salesmen covering that part of the northern New Jersey territory in which a warehouse located in Jersey City can give superior service. It will maintain a separate and distinct organization from the Newark Electrical Supply Company, and Mr. Rost states that his interests in the Hudson Company will

in no way affect or change his connection with the Newark firm.

Annual League Meeting

Rhode Island Group Makes Extensive Plans for the Future

On January 17 the Rhode Island Electric League held its first annual dinner since the adoption of its new constitution and bylaws. The dinner was attended by one hundred and seven members and guests, a number of people coming down from Boston.

In his report Secretary Harry E. Dawson mentioned that the year covered by the report included sixteen months due to the adoption of the new constitution and the change in the fiscal year. During that period there were twenty-one meetings including six dinner meetings. There was one outing held in coöperation with the Contractors Association.

Three electric homes were conducted and two exhibits were held in connection with shows. Two thousand circular letters were mailed to people taking out building permits, the convenience outlet being called to their attention. One hundred and thirteen calls were made upon architects and builders and the total number of people talked to at the electric homes was 41,309. In all cases the convenience outlet was featured.

The League made a careful study of the new Code and has gathered facts and figures on the license laws from all over the country. It has kept in close touch with the newspapers and supplied them with the number of houses wired, appliances sold and other material which would be of assistance to them in encouraging manufacturers to advertise in the local newspapers.

It is now taking up the matter of broadcasting stories by radio. This proposition has not been brought to maturity yet but electric stories have been gathered and the matter taken up with the most powerful broadcasting station in the city and plans nearly completed to have these stories broadcast.

A good deal of work has been done along the line of getting the newspapers away from featuring electricity as the cause of fires. The real cause of these fires is being sought and the facts supplied to the papers.

The League is keeping in close touch with the Society for Electrical Development and has already selected a considerable amount of material supplied

You Cannot do Better than BEN-OX for Commercial and Industrial Lighting

The Ben-ox Basic Element is attached to any standard outlet box and the wiring is completed by looping the wires or fastening the ends under the terminal binding screws, like this.



Outlet Box



Ben-ox Basic Element

You now have a permanently wired outlet. Keep that in mind. No matter what else you do after this, you do not disturb this wiring.



Basic Element Wired and Attached to Outlet Box

If it is a commercial installation you cover the basic element with a brass shell canopy. For a purely industrial plant layout you would put up a cast flange.



Commercial Ceiling Unit

You then screw in a keyless socket element, or a pull socket element, if you wanted local control, and you have a complete receptacle, get inspection and approval, screw in a lamp and get light.



Factory Ceiling Unit



Keyless Socket



Pull Chain Socket

But you would want, later on, to decide upon a reflector, a shade holder for a glass shade or bowl, or perhaps a pendent unit. You could then screw in an appropriate Ben-ox Reflector, Shade Holder or Connector.



Threaded Reflector



Threaded Shade Holder



Threaded Connector



Three Chain Hook and Single Chain Hook

In the same way, by means of the Ben-ox thread, you could interchange any of these or other styles of shade holders, reflectors and connectors, or you could take down the lighting unit for cleaning, while redecorating, or making changes and put it in place again, all without disturbing the original wiring.

Unusually good-looking and rugged, with exclusive features of Easy Wiring, Flexibility and Interchangeability.

Easily Wired The terminal wires are looped around or ended on heavy terminal binding posts, doing away entirely with soldered or taped joints.

Highly Adaptable The Ben-ox Basic Unit forms a complete keyless or pull chain outlet on which inspection and approval may be secured. At any time, subsequently, R. L. M. Standard Dome, Bowl, or Angle Reflectors, Shade Holders for Glass Shades or Enclosing Bowls, and Connectors for Pendent Fixtures may be screwed in place without disturbing the original wiring.

Flexible and Interchangeable If changes in size or style of Reflectors or Glassware become necessary, the reflector, shade holder or connector in place is unscrewed and the appropriate fitting screwed in place as easily as taking out and putting in a lamp bulb.

Reflectors and other fittings are easily taken down for cleaning or to protect them from damage during redecorating or making structural changes.

Whenever Commercial or Industrial Lighting is being considered it will pay to investigate Ben-ox. Our nearest office will be pleased to give you full information.

BENJAMIN ELECTRIC MFG. CO.

247 W. 17th Street
New York

847 W. Jackson Blvd., Chicago

580 Howard Street
San Francisco



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by that national organization to use locally during the coming year. The League investigated the toast campaign and is taking an active part in making it a success locally.

Mr. Dawson mentioned the advertising service being rendered by the League and that for those not in a position to engage advertising agents this service would prove of the utmost value. Although the League is not in a position to render a complete agency service, it is in a position to secure agency counsel on special problems that may come up in this way and render a very valuable business building service to the contractors. The report of the treasurer showed a very healthy condition of finances.

F. A. Boss, president of the League stated that 1924 will be a very active year. He called attention to the need of new members and complimented Mr. Dawson on the interest and industry he had shown in the affairs of the League. He then called for the report of the program committee which was read by A. B. Baxter.

The League work, this report stated, must of necessity be of a broad educational type, where all branches of the industry will benefit from its activities. The plans for 1924 are designed primarily to induce the public to completely electrify their homes.

There was nearly a unanimous expression in favor of exhibiting electric homes and it is planned to have two or more of them during the year. The latest educational features will be brought into these homes, such as lectures on house wiring, convenience outlets, switches and fixtures. It is planned to have an electric show similar to the one the League staged during the first year of its existence. It is planned also to hold community shows in local halls using suitable properties that have been placed at the disposal of the League. A sufficient amount of money will be budgeted to go into four state newspapers once a week.

It is already planned to adopt the red seal campaign idea such as is used in Toronto. Plans adopted will be printed and distributed to all the electric men in the state and posted in the offices of all the electric companies, jobbers, dealers and contractors. The idea will be taken up with the architects by direct mail and followed up with calls. Newspaper space will also be used. A seal will be supplied by the League to be posted on any house meeting the standard electric home requirements.

A layout contest is already planned to stimulate interest and to secure the very best standard plan. The direct mail matter of the League will be made to tie up with the red seal campaign.

The contractor and dealer service will be continued during the year, and there will be dinner meetings and a coöperative outing. The committee made a special appeal for new members and a campaign is already under way to increase the membership.

It is estimated that there are twenty thousand people electrically employed in Rhode Island and it is proposed to reach as many as possible of these through the medium of employe house organs. This is an entirely new activity of the League.

Following this report, president Boss called for the report of the nominating committee. Under the new constitution an executive committee composed of two men from each division of the industry are elected and this committee elects from among its members the officers of the League and engage a secretary not elected as a member of the executive committee. The executive committee elected was as follows:

Representing jobbers, F. A. Boss and Morton Taylor; contractors, Frank G. Thurston and H. E. Pierce; dealers, H. L. Huse and F. M. Grant; central stations, A. H. Allcott and Roger Gordon; fixture dealers, H. A. Walker and H. E. Watts; and manufacturers, H. N. Otis. The second representative of the manufacturers was not elected due to the lack of manufacturer members. It is expected the vacancy will be filled during the course of the year after the membership drive gets well under way.

The toastmaster, Franklin L. Hall, secretary-treasurer of the Narragansett Electric Lighting Company, was then introduced by president Boss. Mr. Hall expressed the opinion that it was desired to have a toastmaster for this dinner because a toast campaign was in progress. He compared the industry to a three legged stool supported by the central stations, the jobbers and the contractors and dealers. Harry Gilmore, president of the Boston Electrical League, was introduced, who talked about the Association Island meetings and spoke of plans for getting together a large party from New England to attend the 1924 conference.

The next speaker on the program was F. M. Feiker, vice president of the Society for Electrical Development, who gave a very instructive talk on coöperative activities and the condition and future of the electrical industry. The meeting closed after secretary Harry E. Dawson gave some facts about the toast campaign.

The new officers elected by the executive committee are as follows: President, Frank G. Thurston; vice president, Roger Gordon; treasurer, Ralph L. Huse; secretary, Harry E. Dawson. Committee chairmen appointed are: F. Falk, membership; F. A. Boss, finance; and A. H. Allcott, program.

Meet With Architects

To cement the relationship between the electrical industry and the architectural profession and develop closer coöperation and better understanding between the two groups, the manufacturers' division of the Electrical Coöpera-



Distributor Representatives of the Robbins & Myers Company in the Neighborhood of Cincinnati Who Recently Visited the Main Plant of That Manufacturer at Springfield, Ohio. A Number of Contractor-Dealers Are Noted, a Well Known Electragist Being Charles M. Beltzhoover—Extreme Upper Left Corner—Who Was General Chairman of the Annual A. E. I. Convention Held in Cincinnati

HUBBELL

Extenders for Pull Sockets



Sell them along with reflectors—
and enjoy an added profit

Here's your chance for some profitable, easy-to-get business.

Whenever you take an order for large diameter shades or reflectors for use on pull sockets, point out the need for Hubbell Extenders. You'll find that most of your shade and reflector customers will want them.

Hubbell Extenders are made in types for brass shell and porcelain sockets, and in a range of sizes for reflectors from 8 inches up to 22 inches in diameter.

Order an adequate supply.

HARVEY HUBBELL INC.
ELECTRICAL WIRING DEVICES
BRIDGEPORT CONN. U.S.A.



ELECTRICAL WIRING DEVICES

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

tive League of Denver arranged an unique banquet and entertainment recently for local architects and draftsmen.

Although the affair was more or less of a venture in that section, it being the first time in the history of the electrical industry of the territory that a gathering of electrical men and architects was arranged, it was regarded as a hundred percent success.

In the words of H. D. Randall, chairman of the manufacturers' division of the League and district manager of the General Electric Company, "the success of this gettogether was most gratifying." Members of the division feel that much has been done to establish a greater consciousness on the part of the architectural fraternity of the magnitude and ramifications of the electrical industry and the importance of electricity in industrial and domestic life, due to this gathering.

No attempt whatever was made during the banquet at advertising nor was anything of an electrical nature placed on exhibition. Obviously the affair was designed to promote their acquaintance.

Chairman Randall served as toastmaster and introduced the two speakers, one an electrical man and one a prominent architect. The first speaker, F. L. Easton, district representative of the Economy Fuse & Manufacturing Company, reviewed the purposes of the manufacturers in arranging the gettogether. The reply was made by Robert K. Fuller, president of the Colorado chapter of the American Institute of Architects.

Of importance to the electrical industry, locally as well as nationally, was the announcement by Mr. Fuller that coöperation is the key to success; that "architects need the coöperation of such groups as yours and others and should accept it," and also that a building congress, comprising representatives of all building industries in Denver, was being formulated.

He stated the Electrical Coöperative League of Denver should be a component part of this organization, which is designed to serve as a clearing house for the whole building profession. Representatives will be named, it is expected, from the general contracting group, trades group, plumbing group, and so on. Details of this unique organization, which has the solid backing of the Colorado Chapter of the American Institute of Architects, remain yet to be worked out.

Expenses of the party for architects

were underwritten entirely by the individual manufacturer members of the League. In addition to the honor guests, members of the advisory board of the League attended. The evening program which followed the banquet included a number of special musical and dancing features.

Women Electragists

In commenting on several applications sent in to Headquarters from St. Augustine, Florida, Arthur P. Peterson, A. E. I. fieldman, writes as follows:

"One of these applications is from what I believe to be the only woman electragist—Mrs. A. V. Pomar, sole proprietor and manager of the St. George Electric Company, in the oldest city in the United States."



The Proprietor and Her Store

Headquarters has knowledge of another woman electragist—Mrs. C. O. Heath of the Heath Electric Company, Omaha, Nebraska. Are there any more?

Mr. Peterson states that Mrs. Pomar has been engaged in business for four years; that she does a large part of her estimating; that she is a real salesman, getting work at a good figure; and that she also is a natural electragist, in that she gives excellent service and insists on high class workmanship.

Organized in Atlanta

Notice has been received that the Atlanta Electrical Association of Atlanta, Georgia, meets regularly every week in the pine room of the Ansley Hotel. Meetings are held on Thursday at 12:30 p. m. The secretary of the organization is W. W. Barr, 12 Fairlie Street, Atlanta, Georgia.

The Young Radio Fan

Speaking of the enthusiasm which radio arouses, M. H. Johnson, the original electragist, of Utica, N. Y., says that his family is so interested in radio that it is difficult to get the youngsters to retire until the evening radio program is at an end.

One night recently Mr. Johnson decided to retire early and he insisted that the rest of the family go to bed at the same hour. Before sleep overtook him, Mr. Johnson heard strange sounds in another part of the house. Hurriedly arising, he stepped into another room, when to his surprise he saw a light in the living room where the radio set is installed. Quietly slipping up to the door he saw his youngest son comfortably seated in an easy chair, bundled up in warm bed clothes, with a head set properly adjusted, a glass of milk and a piece of pie within easy reach on the table, and assiduously reading a favorite book.

Takes New Position

Harry J. Walsh, who for the past year was assistant to Director Lane of the electrical industry's Joint Committee for Business Development, has been appointed assistant publicity manager of C. Brandes, Inc., New York City.

Previous to his connection with the Joint Committee for Business Development, Mr. Walsh was for several years on the editorial staff of ELECTRICAL RECORD, and was news editor of that publication when he resigned to go with the Joint Committee.

Mr. Walsh was educated in Columbia University and during the war served overseas with the first brigade of the Tank Corps of the United States Army.

Fan Motor Program

The fan motor section of the Associated Manufacturers of Electrical Supplies in coöperation with the Society for Electrical Development has undertaken a coöperative fan motor promotional program designed to emphasize the diversified uses of electric fans. In general the activity provides for the dissemination of informative items chiefly regarding the nonsummer uses of the electric fan as:

To stimulate radiation in cold rooms with hotair and hotwater heating and to induce circulation in hotair furnaces.

To increase draft in furnace.

To speed up the drying of freshly varnished furniture or floors.

To speed up the drying of laundry.

WEBER DEPENDABLE WIRING DEVICES



WHEN **WEBER** MAKES A SWITCH
IT'S A **SWITCH**



SURFACE ROTARY SWITCHES NOW READY!

Single Pole, with Nickel Cover and Black Handle

5 amperes, 125 volts—3 amperes, 250 volts

Cat. No.	List Price	Std. Pkge.	Description	Pkge. Weight	Carton
2510	28c	250	Slotted Base	68	10
2511	28c	250	Solid Base	68	10
2512	32c	250	Slotted Base Ind.	73	10
2513	32c	250	Solid Base Ind.	73	10

Three Point, with Nickel Cover and Black Handle

3 amperes, 125 volts—1 ampere, 250 volts

2530	48c	100	Slotted Base	31	10
2531	48c	100	Solid Base	31	10

Single Pole, with Porcelain Cover and Porcelain Handle

5 amperes, 125 volts—3 amperes, 250 volts

2520	32c	100	Slotted Base	45	10
2521	32c	100	Solid Base	45	10
2522	36c	100	Slotted Base Ind.	46	10
2523	36c	100	Solid Base Ind.	46	10

Three Point, with Porcelain Cover and Porcelain Handle

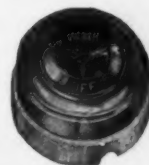
3 amperes, 125 volts—1 ampere, 250 volts

2540	52c	10	Slotted Base	4	10
2541	52c	10	Solid Base	4	10

The diameter of all bases is 2 inches. Holes for supporting screws are spaced 1 3/8 inches on centers.



Weber Distributing Jobbers Have Them in Stock



HENRY D. SEARS

General Sales Agent

80 BOYLSTON STREET
BOSTON 11, MASSACHUSETTS

DISTRICT SALES REPRESENTATIVES IN

New York Philadelphia Cleveland Chicago
San Francisco Los Angeles Seattle

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

To aerate the refrigerator after it has been cleaned.

To dehydrate fruits and vegetables.

To dry white shoes after cleaning.

To dry hair quickly.

To cool and ventilate the kitchen.

To supply fresh air service to the home and place of business.

It has been suggested that the Society in carrying forward this promotional program sponsor a prize offer of some sort among the public, a means of further bringing to their attention the fact that the same electric fan which keeps them comfortably cool in summer will also increase the warmth in homes and places of business during the winter as well as facilitating drying and cleaning.

Symphonic Snow Shoveling

As an officer of the New York Edison Company, it is not surprising that Walter Neumuller is a radio fan. He has been connected with the same company since early youth, which has kept him in close touch with things electrical. So naturally he is interested in radio and has a fully equipped radio set installed in his home.

Mr. Neumuller also is an accomplished musician. He plays the violin and the piano, is a member of the Philharmonic Society of New York, and rarely misses a recital or concert of any distinction.

One Sunday afternoon when Mr. Neumuller was getting ready to attend one of his favorite symphony concerts, it began to snow. The walk from his front door to the pavement was soon covered, as was the long stretch of sidewalk at the front and side of his home. He realized that the snow must be removed before it was tramped down by pedestrians. But there was the symphony concert to begin shortly.

"Ah!" said Neumuller, realizing that invention is the eldest child of necessity, "The radio!" Hastily attaching some extra length of cord to his head set, he donned his overseas cap and heavy coat, shouldered his snow shovel, tuned in with Carnegie Hall, and with his head set over his ears, proceeded to remove the snow from the walks of his property, spurred on by harmonious strains of Beethoven's Sixth Symphony.

This is the first time on record that the radio and the snow shovel have been combined, and Mr. Neumuller is to be congratulated on his forethought—doubtless prompted by his love of music, not snow shovelling.

Buys New Plant

The Mutual Electric & Machine Company of Detroit, announces the purchase of the plant of the Aluminum Castings Company.

This property faces five hundred feet on Joseph Compau Avenue, adjacent to the Dodge Brothers' plant, and is over eight hundred feet in depth. It comprises about eight acres—four acres under roof, one story fire proof construction—with ample siding facilities.

The Mutual people plan to vacate their two present plants immediately and move their entire organization and equipment into the new factory. Increased space and better manufacturing and shipping facilities will enable them to greatly increase their production.

The officers of the Mutual Electric & Machine Company are H. J. L. Frank, president; Leon H. Frank, secretary; and F. M. Ferguson, treasurer.

Novel Sales Demonstration

Whenever some celebrity visits St. Louis, the hospitable city rolls out a set of the handsomest parlor cars that ever ran on street car tracks. Luxurious chairs, handsome hangings and thick, Ritzie rugs on the floor make those cars linger long in the memories of all who ride.

When the 1924 Western Electric clothes washer arrived in town, Frank Adam and The Electric Shops, Inc., decided the improved model should be classed as a distinguished guest, and promptly arranged with the street railway people to give it extended rides around the city, in those luxurious parlor cars.

The cars were definitely routed in loops, and each car carried complete equipment for showing the outstanding

features of the clothes washer to all who came aboard. Cars were hung with signs announcing that the ladies were invited to ride free. "We'll Bring You Back," the sign promised.

Newspaper advertising stirred up interest in this motorized demonstration tour, starting with small teaser ads. This was followed up by larger advertisements when the campaign started, listing the exact routes of the parlor cars and inviting all the ladies to ride and look and have their questions about electric washing answered.

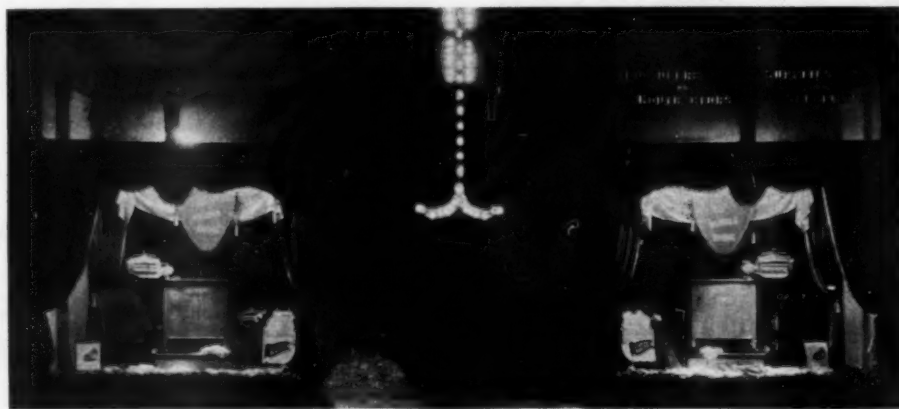
During this campaign the coöperating stores featured the new washer in their window displays and focussed interest on the new model with folders, posters and word of mouth publicity between salesmen and customers. Each rider guest who boarded one of the cars was asked to register and this provided an excellent prospect list from which further sales were made.

Not every town has a street railway system equipped with palatial parlor cars. But every community does have people and streets and motor trucks. This idea can be used with a jitney bus playing the part of the parlor car, and the jitney has the advantage of being free to choose its own streets. This may be an idea worth filing in your scrap book of selling hunches.

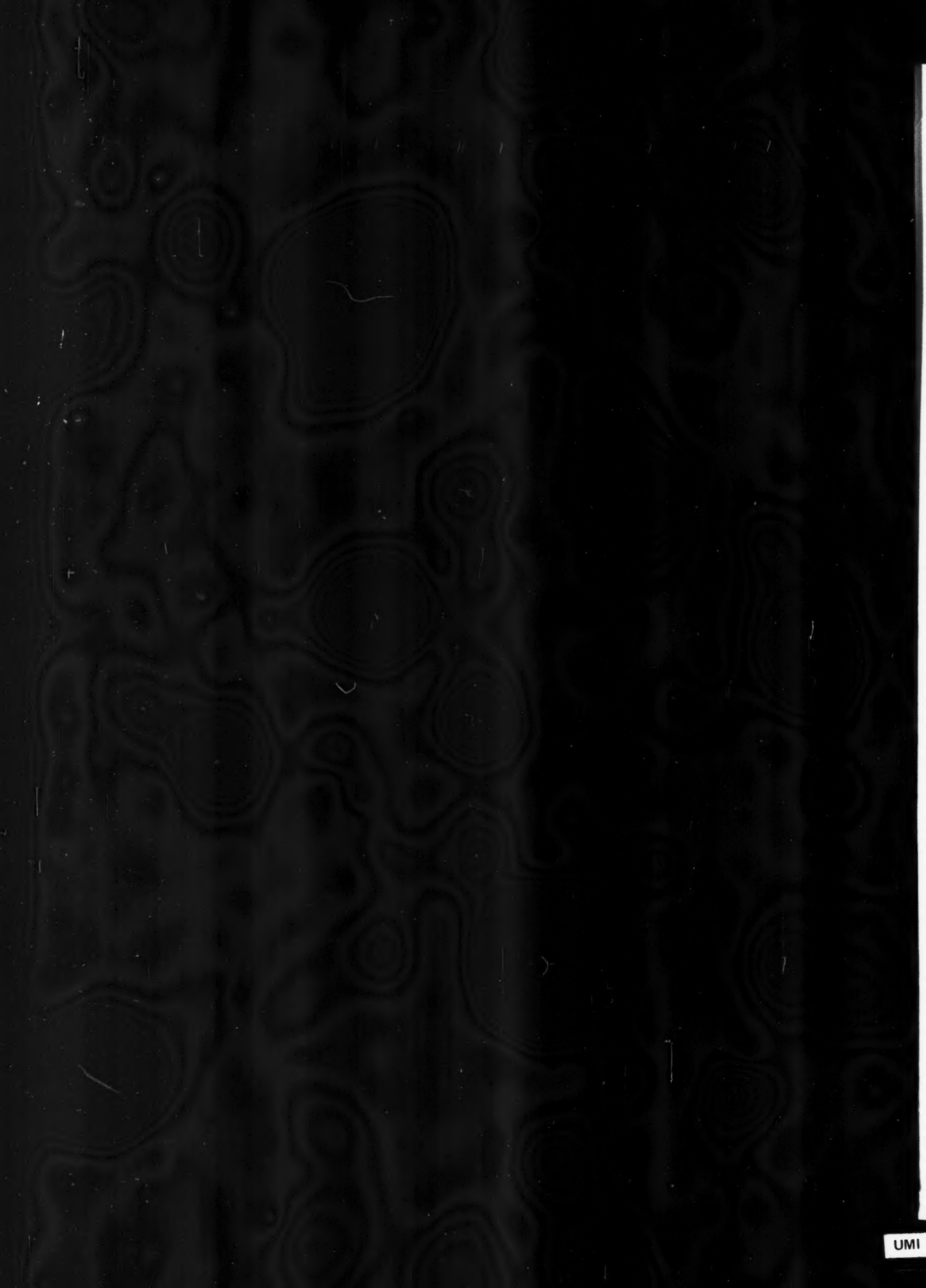
Important Wage Decision

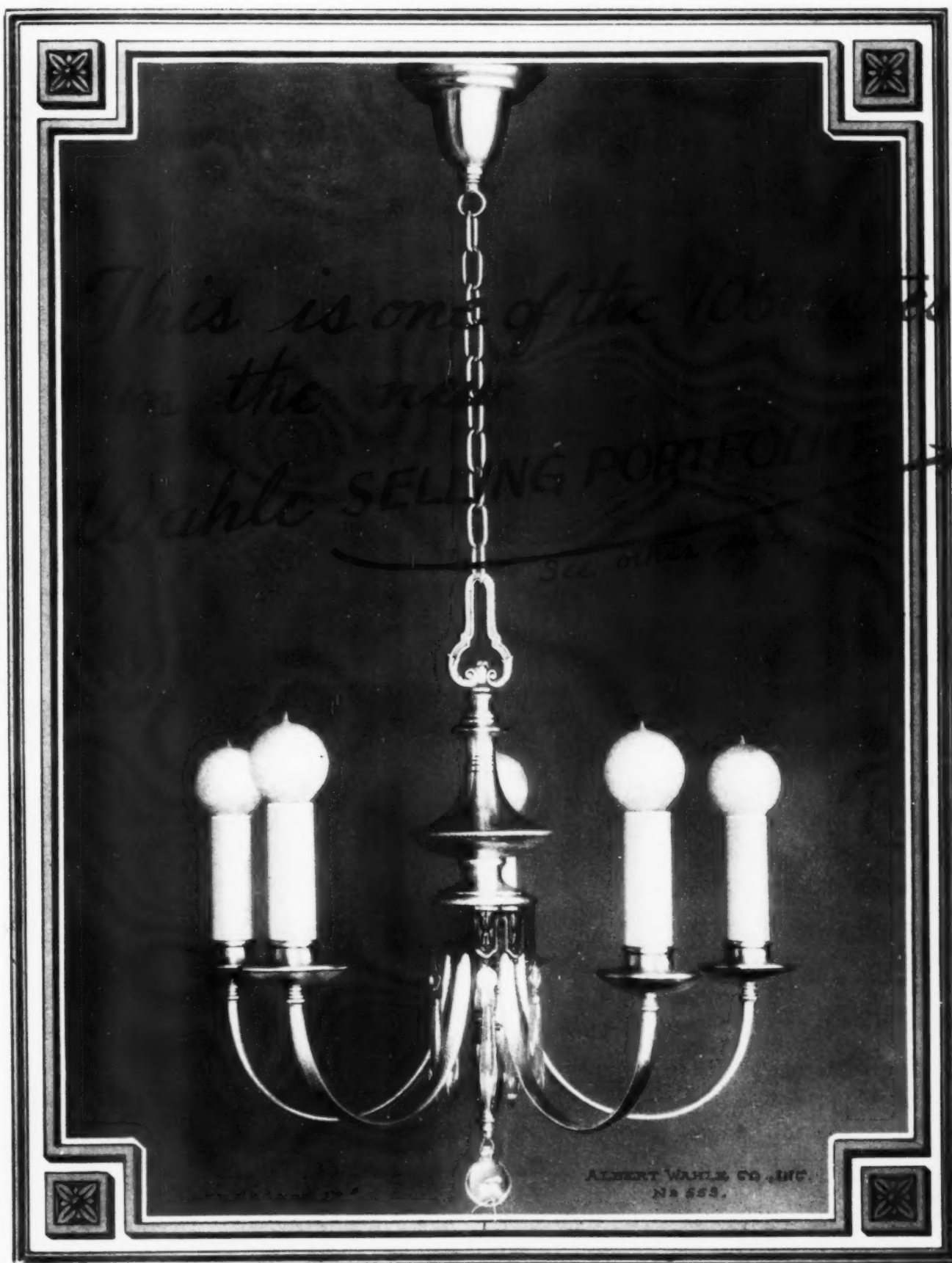
According to *Warm Air Heating and Sheet Metal Journal*, the official magazine of the National Association Sheet Metal Contractors, the Court of Chancery in New Jersey has handed down a decision that may have a far reaching effect on the demand of enforcing wage rates between different localities.

A New York concern secured a painting contract in Newark, N. J., and hired Newark union men at the rate of \$8 per



Night View of Storefront of Frank Adam Electric Company, Electragist, St. Louis, Featuring Display of New Washer During the Parlor Car Campaign





— EIGHT — REASONS — WHY THE LIGHTING FIXTURE DEALER — SHOULD USE — WAHLE SELLING PORTFOLIO



- 1 The Wahle Selling Portfolio is the *Best Working Tool* ever prepared for the Dealer to sell Residential Fixtures

To Mr. and Mrs. Public

- 2 The Wahle Selling Portfolio is really a Portable Fixture Display which will enable you to assist your Customer in making a suitable selection

Right in Their Homes

- 3 The Wahle Selling Portfolio consists of 105 Plates, showing a selection of over 200 TYPES of Exclusive FIXTURES made by Wahle Associate Factories

Priced to Meet the Public Demand

- 4 The Wahle Selling Portfolio also contains EIGHTEEN COLORED PLATES showing a variety of actual finishes used on

Wahle Lighting Fixtures

- 5 The Wahle Selling Portfolio has been prepared with Loose Leaf Plates and bound in a most attractive and serviceable cover, that measures up to

Wahle Standard

- 6 The Wahle Selling Portfolio, together with Wahle Service, makes it unnecessary to Tie up your Money in STOCKS OF FIXTURES or Fixtures Parts, and in that way, you

Avoid Depreciation

- 7 The Wahle Selling Portfolio immediately places you in a position to get Real Service from Wahle Distributors who carry the stocks for your requirements.

The Start for Real Profit

- 8 The Wahle Selling Portfolio will enable you to GET THE REAL FIXTURE BUSINESS IN YOUR LOCALITY. Knowing you have the backing of a Wahle Distributor, the Wahle Company, and the Wahle Associate Factories.

*Order a Wahle Selling Portfolio
NOW*

Fill in and mail this coupon to

ALBERT WAHLE COMPANY, INC.,
224—Fifth Avenue, New York City.

Please send me one Wahle Selling Portfolio, for which I agree to pay \$1.75 upon receipt of bill.

Name

Address

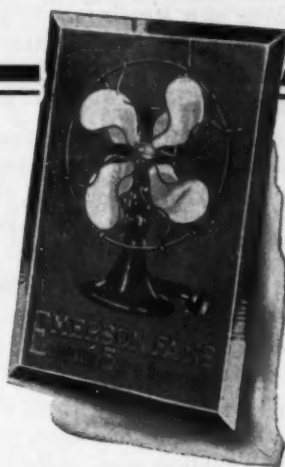
Name of my Electrical Supply Jobber.....

ALBERT WAHLE COMPANY
INCORPORATED

224 FIFTH AVENUE

NEW YORK CITY

"Fan Headquarters" —at your store!



Counter or Wall Sign—a remarkably life-like reproduction of an Emerson Fan, debossed on metal. Rich black and gold on a dark green background. The sign is 9¼ x 13¼ inches, with easel device on back. It's free to Emerson Dealers.

TO BE known as headquarters for an article—a line—or in the field, is a merchant's greatest asset. It is the good will that comes of giving satisfaction over a long period of years, and in being ever ready to meet the varying demands of the public.

The Emerson Line has helped establish many electrical merchants as "Fan Headquarters." It offers—

First—A high quality line backed by a guarantee—a five year written guarantee by factory to user.

Second—A complete line that has kept pace with fan developments every step of the way for 30 years.

Third—A popular feature model—Emerson Jr.—full Emerson quality in a 9-inch fan at a popular price. A trade winner blazing the trail for a bigger fan business.

Fourth—The oil-tight, dust-proof bearing—an exclusive feature of Emerson A. C. Fans. A remarkable selling point easily and effectively demonstrated to any buyer.

Fifth—Trade service through seventy distributors. Carried in stock at convenient points.

The Emerson Electric Mfg. Co.

2018 Washington Avenue

50 Church Street
New York City

St. Louis, Mo.

EMERSON FANS

with the 5 year guarantee

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

day. These men struck on the ground that the contractor was a New York concern and should pay \$9 per day, the wage scale in that city.

The contractor appealed to the court to enjoin the strike and was successful. The court held that the practice of compelling an employer whose place of business in one city to pay the wage scale of that city to workmen he employs to do work in another city where the wage scale is lower, violates public policy, and is in restraint of trade.

The court further held where the employer is a citizen of one state, employing men in another state, such practice violates the policy of the Constitution of the United States guaranteeing the citizens of each state the privileges and immunities of citizens in the several states.

Please Note

Electrical contractors who have been victimized by concerns purporting to have plans and specifications for buildings and asking for deposits against the plans, which deposit was never returned or accounted for, are asked to send particulars to the editor.

Philadelphia Light Campaign

A kitchen lighting campaign was begun by the Philadelphia Electric Company of Philadelphia the middle of February to continue from six weeks to two months. Newspaper advertising space is being taken and the movement is receiving further publicity by the placing of posters on the company's automobile trucks, and through mail order broadsides which are sent to every residence customer in the city.

The offer to the public is that the central station will take down the present kitchen or bathroom fixture and in its place will install the new unit free of charge for one month's trial. If during that period the customer desires to purchase he will make a cash payment of 75 cents per unit and thereafter will pay that amount per unit per month until the total charge of \$7.50 has been paid.

Wiring contractors are offered the opportunity to participate in the increased business which it is expected this campaign will create, according to the following plan: The complete unit, including the 100 watt lamp, will

be sold to the contractor at \$4.07. The contractor may install it on terms to be agreed upon with his prospect, or if preferred the company will pay to the contractor \$2.75 per unit for making the sale and installation, and will carry the account and bill the customer on the terms stated in the offer.

Lehigh Valley Activities

The Lehigh Valley Electrical Association, the organization of which was mentioned in last month's issue with the names of the newly elected officers, started its activities last month.

The organization occupied a large space in the Better Homes and Building Exposition at the Manhattan Auditorium in Allentown, Pennsylvania, and on February 11 carried a full page advertisement in local newspapers. The names and addresses of the thirty-three members of the association were included in the display space.

The following contractor-dealers are members of the Lehigh Valley Electrical Association:

Allentown: Frederick K. Fogel, R. W. Keck & Co., Lehigh Electric Company, Willaim H. Taylor & Co., Crowder, Jr., Company, S. & W. Electric Company, Royal Chandelier Works, Hausman Electric Company, Earl W. Fried, Diefenderfer & Willenbecher, Coleman Electric Company, Samuel J. Engler, Kemmerer Electric Supplv.

Bethlehem: G. Elliott Hill Estate, Charles H. Gehring, Cristol Brothers, Robert C. Huether, Oscar A. Hiskey, A. C. Dullenkopf.

Catasauqua: W. T. Kleppinger, W. I. Litzenberger.

Easton: R. G. Fulmer, James E. Hauck, R. J. Morrison, O. Mertz & Co., J. P. Creveling, F. W. Roll, Walter L. Creveling.

East Stroudsburg: A. Englehardt.

Emaus: Stortz & Eisenhardt.

Lehigh: R. H. Bauchspies.

Phillipsburg, N. J.: F. J. Ashman & Sons, White & Ensley.

New State Association

Fieldman Peterson Holding Enthusiastic Meetings in Florida

With some sixty electragists in the state of Florida, the need for a common meeting ground to discuss ways and means of improving conditions in the contractor-dealer business was apparent and accordingly a meeting was called at Orlando, February 14.

Although but short notice was given, the response was most gratifying and members from the cities of St. Petersburg, Tampa, Sanford, Ft. Lauderdale, Ft. Pierce, Gainesville, Lakeland, Sebring, Leesburg, Haines City, De Land, Jacksonville and Delroy were in attendance. Telegrams and letters from members unable to attend the meeting were read showing their approval and interest in the proceedings.

Preston Ayers of the Ayers Electric Company, Orlando, was unanimously elected president and the same vote made L. D. Little of the Newell Electric Company, Orlando, secretary. Elected to serve with Mr. Ayers on the Executive Committee are Chas. E. James of Ft. Pierce; T. A. Brown, St. Petersburg; L. E. Means, Jr., Gainesville; and W. H. Jackson, Lakeland.

Following the policy adopted by other state organizations recently formed, membership in the Association of Electragists-International is a prerequisite to membership in the state organization, and a member of the A. E. I. automatically becomes a member of the state body.



A Happy Bunch of Drys—What? Yes, All Members of the Laundry-dry-ette Organization of Cleveland and Are Here Shown Attending the Recent Semi-annual Sales Conference of That Company in the Fifth City

RAVEN CORE—A Rubber Covered Wire of Distinction!

Made by a house of standing.

Specified by all the leading architects.

Used by the Contractors who do the better grade of work.

Can you afford to overlook it?

NEW YORK INSULATED WIRE CO.

Main Office: NEW YORK

Factory: WALLINGFORD, CONN.

Agencies and Branches:

DENVER

LOS ANGELES

CHICAGO

BOSTON

Opportunities

are in these pages every month. Do you take advantage of those offered by our advertisers?

EACH NUMBER OF THIS PUBLICATION IS A COMPOSITE CATALOG OF NEW AND USEFUL THINGS FOR THE CONTRACTOR-DEALER, AND FOR THOSE WHO ARE ENGAGED IN THE ELECTRICAL INDUSTRY

Every person connected with your business should read every issue of this publication—

For Profit

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

The adoption of the A. E. I. Manual of Estimating and the Standard Accounting System was recommended very forcefully by members who had learned the value of these two assets to their business. A movement to improve conditions by a knowledge of costs is under way and with the assistance of Field Representative Arthur P. Peterson, who has spent some three weeks already in the state of Florida and will still put in more time there, this should progress rapidly.

Members urged each other in impromptu speeches to improve their own credit standing so that the jobbers would seek their business instead of being forced to cater to irresponsible carpet baggers and "four monthers" as they are called in Florida.

Meetings will be held monthly until a complete organization has been perfected and thereafter quarterly meetings will take place in the various cities.

Meeting in Detroit

N. J. Biddle, manager of the Electrical Contractors' Quantity Survey Bureau of Detroit, Michigan, reports an unusually large and interesting meeting of electrical men held in that city on January 11. The attendance was more than nine hundred, which is proof of Mr. Biddle's publicity capabilities.

Ben W. Clark, chief electrical inspector of Detroit, was the chairman, and M. J. Kelly led in the singing of popular songs. Mr. Langdell of the Consumers' Power Company was the first speaker and talked on safety as applied to meter and service installations. His talk was illustrated with lantern slides.

Other talks were made by Carl Harza, chief of the meter installation department of the Detroit Edison Company; H. Shaw, manager of the Electrical Extension Bureau; and J. B. Gailbraith, assistant chief inspector of the city of Detroit.

The meeting was so successful that it is hoped that others of a similar character can be arranged in the future.

News Notes Concerning Electrical Contractor-Dealers

Business Changes, Store Improvements, and New Establishments Opened

Triumph Appliance Corporation has opened a radio supply business at 320 Fulton Street, Union Hill, New Jersey. Incorporators: R. D. Yonkers, 529

Hamilton Avenue, Woodcliff, and others.

Greene and Taylor Electric Company, Hazard, Kentucky, has added an extensive line of radio supplies. Winston Coleman will be in charge.

M. A. Modell & Sons, in the radio and electrical supply business at 71 Cortlandt Street, New York City, have opened a branch store at 14 Church Street.

Providence Distributing Company, Incorporated, has established headquarters at Providence, Rhode Island, where radio equipment will be handled.

Kelly & Phillips, Incorporated, will conduct an electrical supply business at 312 Flatbush Avenue, Brooklyn, New York. Incorporated capital, \$10,000. Incorporators: J. S. Kelly, 1371 East Seventeenth Street, Brooklyn, and others.

State Electric Company, an old established concern recently incorporated, is engaged in the electrical supply business at 706 South State Street, Salt Lake City, Utah. Incorporated capital, \$10,000.

Electrical Equipment and Service Company is conducting an electrical and radio supply business at Anderson, Indiana.

Radio Products Company announces its opening at 22 State Street, Hartford, Connecticut.

Raymond James Electric Company has established headquarters at 115 So. Fourth Street, Louisville, Kentucky.

The Alladin Lighting Company announces its opening at Rochester, New York, where a complete line of electrical supplies will be carried. Incorporated capital, \$10,000. Incorporators: A. T. Prinsen, 412 Melville St., Rochester, and others.

The Reliable Electric Company of which A. J. Bartels is proprietor, is engaged in the electrical supply business at 1118 South Washington Avenue, Lansing, Michigan.

Bottis Electric Shop has established headquarters at Morristown, Tennessee. Incorporated capital, \$12,000.

Manchester Electric Company, Manchester, Connecticut, has increased capital to \$25,000 by the issuance of an additional thousand shares of stock.

Marshall Radio Products, Incorporated, is locating at 2845 West Nineteenth Street, Chicago, Illinois. Incorporated capital, \$25,000. Incorporators: J. F. Matteson and others. Correspondent: Custer and Cameron, 209 South La Salle Street, Chicago.

Consolidated Radio Service Corporation of which Benjamin Miller, 103 East 14th Street, New York City, and others are incorporators, will feature an extensive line of radio supplies. Incorporated capital, \$25,000.

Dewey Radio Distributing Company announces its opening at 16 Stuart Street, Boston, Massachusetts.

Viking Radio Corporation has established headquarters at Wilkes-Barre, Pennsylvania, where a complete line of radio equipment will be handled. Incorporated capital, \$25,000. Incorporators: J. B. Keeler, Jr., 40 Fort Street, Wilkes-Barre, and others.

Jewell Radio Company will conduct a radio supply business at Henderson, North Carolina. Incorporated capital, \$50,000. Incorporators: F. A. Jewel, Henderson, and others.

Wiseman Electric Company is engaged in the electrical supply business at Main Street near Walnut, Greenville, Mississippi. Incorporated capital, \$50,000.

The Beckett Electric Company, Incorporated, has established headquarters at the Electric Engineers Insurance Building, Dallas, Texas. Incorporated capital, \$50,000.

C. & H. Electrical Supply Company is locating at 932 West Roosevelt Road, Chicago, Illinois. Correspondent: Attorney A. Masover, 512 Westminster Building, 110 South Dearborn Street, Chicago.

Aladdin Radio Laboratories, Incorporated, has established headquarters at 1225 South Michigan Avenue, Chicago, Illinois. Incorporated capital, \$50,000. Incorporators: Raymond W. Lawrence and others. Correspondent: P. W. Sullivan, 22 West Monroe Street, Chicago.

Avery & Loeb Company, 114 North Third Street, Columbus, Ohio, in the electrical business, is adding radio equipment and increasing stock.

Thomas F. Whitehead Company will conduct an electrical supply business at 6701 South Halsted Street, Chicago, Illinois. Incorporators: Thos. F. Whitehead and others. Correspondent: Dwight McKay, 79 West Monroe Street, Chicago. Incorporated capital, \$55,000.

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DISTRIBUTOR  PRODUCTS

Prepare

for the coming Summer by
placing your order with us
now for

General Electric Fans

If you haven't this year's
data, we will be glad to send
it to you.

THE PHILADELPHIA ELECTRIC
COMPANY SUPPLY DEPT.
130-132 South Eleventh Street
Philadelphia

Knu Canopy Insulator



Approved by Underwriters' Laboratories

Can be applied to canopy without the
use of tools
in rolls of 10 feet.

ARTHUR F. STANLEY

SELLING AGENT

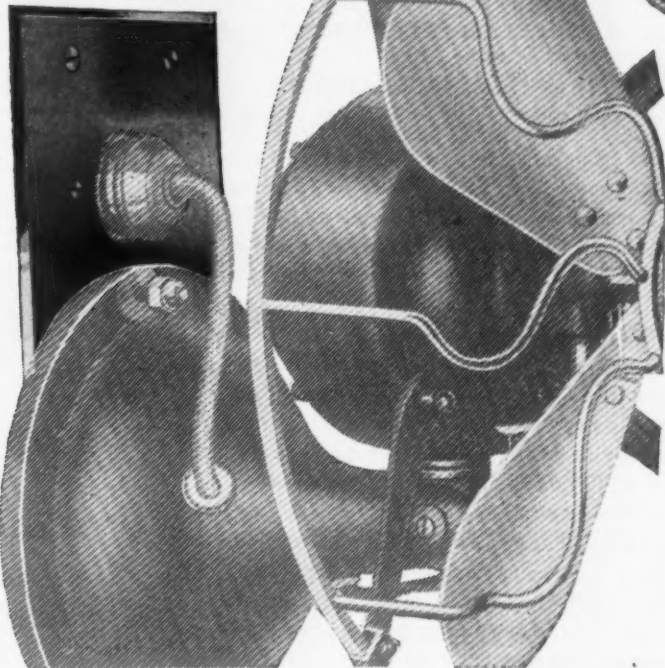
West & Hubert Sts.

New York

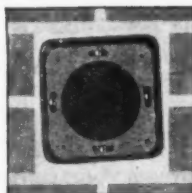
Telephone 5200 Canal




HANGER OUTLET




For the Support and Current Supply of Fans, Heaters and Lighted Pictures



The  Hanger Outlet is substantially built. Consists of a special 4x4x1 1/2 pressed steel outlet box, and adjustable inner ring, (shown above); a flush brass plate, fitted with Hubbell receptacle; and a strong bolt, securely anchored, for supporting Fan, Heater, etc.

Produces a workmanlike finish to a job, is part of the original wiring installation and does away with dangerous, dirt-catching brackets and long, dangling cords.

 Hanger Outlets have been installed in a great many prominent buildings and have an 100% record for satisfaction.

Send for complete description and estimate for your present jobs. No obligation involved.

Frank Adam

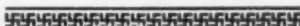
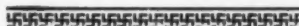
ELECTRIC COMPANY
ST. LOUIS

District Offices:

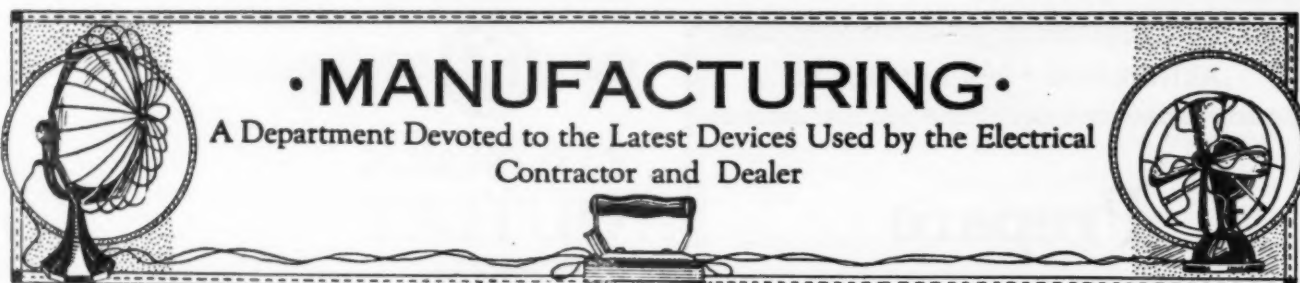
Detroit, Cincinnati, New Orleans, Dallas, Minneapolis, Kansas City, Indianapolis, Los Angeles, San Francisco, Philadelphia, Denver, Seattle, Chicago, Pittsburgh, New York City.

Other Products

Major System of Theater Lighting Control; knife switches; safety switches; hanger outlets; reversible-cover floor boxes; A. C. and D. C. Distribution Switchboards.



ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST



New Battery Charger

The Magnar Battery Charger, a device marketed by the General Electric Company for the trickle or floating charging of railway signal batteries, is being applied to new fields, such as time clocks, bell systems, burglar alarms and tripping batteries in power plants and sub stations. It has been found that on such installations the batteries may be discharged continuously at very low rate or intermittently at a higher rate, the average discharge rate being low in either case.

The average rate at which the battery discharges being first determined, the equipment is regulated to supply the battery just enough current to compensate for the discharge plus a small additional amount to allow for internal leakage. Among the advantages claimed for this method of charging are the continuous maintenance of a fully charged battery, a constant voltage, longer life and the necessity of a minimum amount of required attention for care.

Power and Light Unit

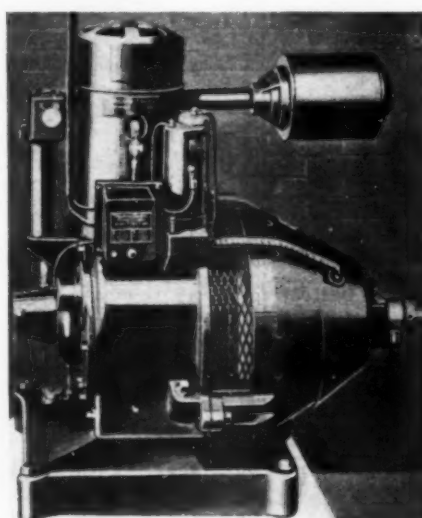
A Power and Light unit manufactured by the Western Electric Company combines the engine and electric generator on one shaft. Its rating while said to be 750 watts actually develops more than 850 watts on a battery charging run.

The engine runs as satisfactorily on kerosene as on gasoline, the protected tank in the base holding two gallons of kerosene, which is enough to charge the battery. Gasoline is used in starting, however.

The oiling system is a feature, as oil is simply poured into the crank case, from the bottom of which it is pumped into a trough and to the main bearing, insuring copious lubrication. The trough is kept filled with oil as long as there is oil in the base, by means of a positive acting pump. A splasher scoops up and sprays oil from the trough into the cylinder thereby lubricating it thoroughly and also causes

the oil to run in a steady stream over the crank pin bearing. Practically every moving part inside the crank case runs in a bath of oil.

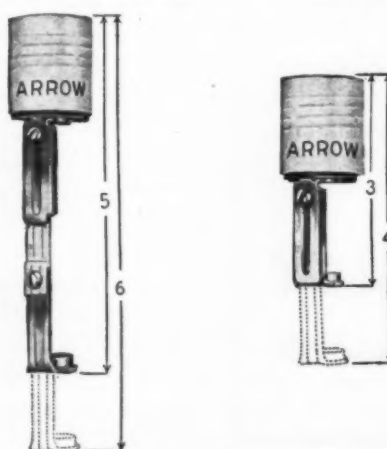
Every part is readily accessible and the entire outfit can be easily taken



apart and put together. The crank case cover can be removed without disturbing the setting of the valves and gears. The battery is large size and ruggedly built. A pressed steel fan insures correct operating temperatures, and a centrifugal type of throttling governor insures a constant speed.

Arrow Sockets

Two new Candle Sockets have been placed on the market by the Arrow Electric Company of Hartford, Con-



necticut. The advantage of these devices is that they have extension hickies which enables one, known as 4007, to be extended from 3" to 4" and the other, known as 4007A, to be extended from 5" to 6".

As with the other Candle Sockets of this manufacturer these devices are equipped with 8 inches of No. 3 candleabra chain and a splicing link for easy assembly, although No. 6 chain can be furnished if desired. Brush brass is the standard finish on chains, but any nickel or silvered finish can be furnished without extra charge. These sockets have female bushings threaded for 1/8 inch pipe. The outside diameter of the paper tubing is 1 3/16 inches to accommodate a candle or tubing measuring not less than 1 1/4 inches inside diameter.

Street Light Refractor

A new refractor, known as the Bi-Lux Refractor, that will increase the effective illumination from street lighting units approximately seventy percent as compared with the most efficient units now in service has been developed by the Westinghouse Electric & Manufacturing Company in coöperation with the Holophane Glass Company. Tests made by the Electrical Testing Laboratories of New York show that a 400 cp. lamp within the refractor enclosed within a clear rectilinear glass globe will deliver 2000 cp. up and down the street, 425 cp. across the roadway at right angles to the curb line, and 250 cp. across the sidewalk. As a result of this method of spraying the light, the street is evenly illuminated over its entire surface and there is no glare in the eyes of motorists or pedestrians.

Radio Battery Charger

A battery charger for radio A and B batteries was recently placed on the market by the Acme Electric and Manufacturing Company of Cleveland. Made for 2 ampere and 5 ampere capacity this charger has an attachment which

THE MARKET PLACE

FOR EMPLOYMENT AND BUSINESS OPPORTUNITIES

RATES:

Situations Wanted, \$1.00 per inch, each insertion.
Help Wanted, Business Proposals and For Sale, display type, \$2.50 per inch, each insertion.

POSITION WANTED

Technical graduate, age 30, with over four years' experience estimating and superintending for electrical contractor doing large volume of business in large city in Middle West, desires to make a change. At present employed. Address: Box F, c/o THE ELECTRAGIST, 15 West 37th St., N. Y. City.

Position wanted in the East by technical graduate who has had twenty years' experience in contracting. At present employed as superintendent by electrical contractor specializing in the larger types of buildings. Can give references. Address: Box H, c/o THE ELECTRAGIST, 15 West 37th Street, New York City.

LIGHTING FIXTURE SALESMAN WANTED

Young man to solicit and sell lighting fixtures in city of 200,000 population. Have attractive show-rooms. State age, experience and references. Address:

JACOBE BROS. ELECTRIC CO.,
1014 Prairie Avenue,
Houston, Texas.

Surplus Slow Moving Stocks

Electrical or Radio
Converted into Quick—Immediate—Cash
No stocks too large or small.
Write—Wire—Phone or Call.
State in full detail, the items, quantity of each item and lowest prices acceptable.
THE R-C OUTLET
Executive Offices: 303 Fourth Ave., N. Y. City
Phone: Ashland 1109; Gramercy 1585.

INTEREST IN BUSINESS WANTED

Will invest \$1,000 to \$1,500 in going electrical contracting or motor repair business. Technical Education with broad experience in mining, industrial and city work. Address: Box J, care of THE ELECTRAGIST, 15 West 37th Street, New York City. It-3

FOR SALE

Single Phase A. C. Motors

One 7½ H. P., 60 cycle, G. E. motor, 220 volt, 1800 R. P. M.
One 5 H. P., 25 cycle, Century, 110-220 volt, 1400 R. P. M.

D. C. Motors

Two D. C., 110 volt, 10 H. P., elevator motors, in good shape.
One 5 H. P., 110 volt, 1200 R. P. M., D. C. motor, as good as new.
One 2 H. P., 110 volt, 1200 R. P. M., D. C. motor, as good as new.
Two 1 H. P., 110 volt, 1200 R. P. M., D. C. motor, as good as new.

D. C. Generators

One 17 K. W. Ridgway Generator at 750, 125 volt.
One 30 K. W. Ridgway Generator at 600, 125 volt.

CLARENCE W. BECKLEY
100 Liberty Street,
Warren, Pennsylvania

Concerning a Product and a Trade Mark—

WIRING



DEVICES

The idea back of the "DIAMOND H" Trade Mark—

THOROUGHNESS — QUALITY — SERVICE

Thoroughness in design, materials and construction can alone produce quality. Nothing but quality can give service. Nothing but a service-giving capacity can create a permanent and growing business.

In the "Diamond H" trade mark this company has aimed to symbolize the utmost of value to the electrical contractor.

THE HART MANUFACTURING COMPANY

HARTFORD, CONN.

NEW YORK
CHICAGO

BOSTON
LOS ANGELES

DETROIT
CLEVELAND

DENVER
LOUISVILLE

TORONTO,
CANADA

permits it to charge up to and including 36 B type cells. So unique in design and construction the operating characteristics of this device are such that A batteries can be charged while the set is in operation.

Jack Type Switch

A convenient means for easily disconnecting motors and their control equipments from the line for purposes of inspecting or working on the electrical or mechanical equipment in safety, is a new jack type disconnecting switch, recently placed on the market by the General Electric Company. This serves as a disconnecting switch and, by means of wattmeter or ammeter jacks, the power or current readings may be taken without interrupting the circuit of the motor.

This switch is made in one rating a four-pole, 80 ampere unit, suitable for use on two or three phase circuits. In order to connect instruments into the circuit, it is merely necessary to open the door of the enclosing case and insert the ammeter or wattmeter plug into the slots in the compound base. The contacts of the switch are thereby forced apart and the motor current flows through the testing instrument. The switch has an interlocking arrangement between the handle and the cover, allowing the switch to be operated only when the front cover is open. This cover may be padlocked shut to prevent operation of the switch by unauthorized persons.

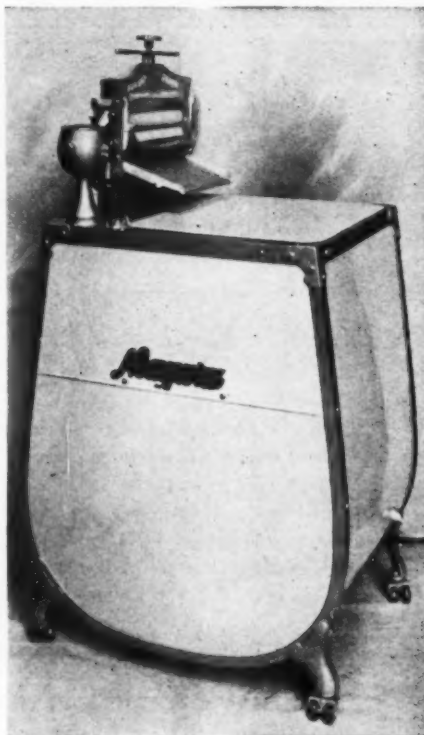
Niagara Washer

An electric washing machine of unusual beauty and simplicity has been developed by the Truscott-Pierce Company of St. Joseph, Michigan. The machine is known as the "Niagara."

One of the interesting features of this machine is the frame construction. The bottom of the cabinet is rounded, permitting the use of one piece, corner to corner angle irons to form the frame. In addition to adding strength to the frame, this construction reduces noise and vibration to a minimum.

The makers have foreseen the necessity of placing the drain valve out of reach of children, and have placed it on top of the machine. Also, to prevent children opening the cabinet doors, the panels are held in place by two machine screws, which may however be quickly removed by the operator of the machine.

The machine uses no beating or scrubbing device, but cleans simply by the movement and action of water as the clothes are moved about. The clothes cylinder gives three distinct movements to its contents, one backward and forward, with 90 oscillations per minute, an end or circular movement, and a flopping movement that overturns the



clothes in the tub. Power for these movements is supplied by a 1/4 hp. Westinghouse, splash-proof motor.

Condensed Notes of Interest to the Trade

The Trumbull Electric Mfg. Co. of Plainville, Conn., has added Eric Foster Storm and H. L. Wheeler to its eastern sales force with headquarters in New York City, and three salesmen, H. P. Shaefer, Henry P. Victor and Mr. Coe, have been added to travel the Chicago territory.

General Electric fans will be advertised in a large number of newspapers covering every section of the country this summer, in addition to being displayed in the advertising pages of national popular and trade magazines.

Chester E. Collier, recently with the Chicago office of the Square D Co., has been appointed to succeed Robert J. Jones in the Cleveland office of Henry D. Sears, representing the Weber line of wiring devices in Ohio, Indiana and Michigan.

A New York office was recently established by the Frank Adam Electric Co. of St. Louis, and Joseph Mann, who has been connected with the home office for a long period of years, is in charge.

Frank H. Swayze has been made line material sales manager of the Western Electric Company with headquarters in New York City. This company also announces that its supply department office located in Minneapolis has been moved to 413 South Fourth Street, that city.

L. M. Nichols has been appointed assistant to the general merchandise manager of the General Electric Company, with J. O. Wetherbie as field supervisor of that department. This company recently announced new geographic designations of its district sales offices, and instead of the old city designations as Atlanta, Boston, Chicago, Cincinnati, Denver, New York, Philadelphia, Pacific Coast, and Southwest G. E. Co., territorial designations have been substituted for these respective places as follows: Southeastern, New England, Central, East Central, Rocky Mountain, New York, Atlantic, Pacific Coast and Southwestern districts.

Negotiations have been completed by the firm of John Sidebotham, Inc., of Frankfort for the purchase of the entire tape plant of the Beldon Company of Chicago.

G. B. Stone, formerly sales manager of the Ohio Tucc Co. of Toledo, has been made district manager for the Indianapolis territory of the United Electric Company.

The Crosley Radio Corp. of Cincinnati has been formed through the merging of the Crosley Mfg. Co. and the Precision Equipment Co. of that city, and four plants are to be operated.

E. F. W. Alexanderson, consulting engineer of the General Electric Co. and chief consulting engineer of the Radio Corp. of America, has been awarded the Order of the Polonia Restituta by the Polish government, in recognition of his meritorious services in connection with the building of Poland's new radio station near Warsaw.

Announcement is made of the promotion of J. L. White to the position of assistant sales manager of Altorfer Bros. Company, Peoria, Illinois. Mr. White formerly was district representative.

"CENTRAL" RIGID STEEL CONDUIT

A GUARANTEED CONDUIT which will always give satisfaction and answer your wiring requirements.



This shows one-half inch "Central White" bent and kinked like a piece of wire. It stood this hardest test perfectly; the weld remaining intact and the galvanizing retaining its coating without cracking.

"Central White"-----galvanized
"Central Black"-----enameled

CENTRAL TUBE CO.
PITTSBURGH, PA.

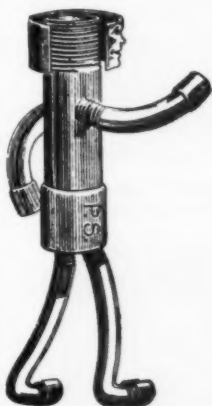
*Keep the
Saving*

PITTSBURGH
THREAD PROTECTED
ENAMELED CONDUIT
STANDARD
PATENTED

IF THE JOB goes smoothly you will make a good profit. And a ready means to assure "smooth going" is to always install Pittsburgh Standard.

This patented Thread Protected Enameled Conduit reaches the job ready to install. Every thread sharp, true and clean—coated with just enough enamel to protect from rust.

P. S. costs no more than ordinary enameled conduit. The saving it makes is clear profit to you.



Enameled Metals Company
PITTSBURGH, PA.

TRADE MARK

T & B

REGISTERED

THE NEW CAPPED ELBOW



1470
1/2-inch

1471
3/4-inch

NO PIPE BENDING—permits CONDUIT to run CLOSE TO THE WALL. Eliminates the large unsightly hole in house wall.

NO FISHING WIRES AROUND SHARP BENDS.

ALL OPENINGS BUSHED to prevent abrasion of wires.

Heavily GALVANIZED and weather-proof.

STRONGLY REINFORCED so that only extreme abuse can damage them.

Like every T. & B. product the CAPPED ELBOW carries the guarantee of THE THOMAS & BETTS CO.

Approved by National Board.

Order them from your Jobber.

THE THOMAS & BETTS CO.

63 Vesey St.,
NEW YORK CITY

10 High St.,
BOSTON, MASS.

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

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526 W. 34th Street, New York City.

SECRETARY AND TREASURER, Laurence W. Davis,
15 West 37th Street, New York City.

GENERAL COUNSEL, Franz Neilson,
New York City.

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140 N. 11th St., Philadelphia.

UNION SHOP SECTION

L. K. Comstock,
21 East 40th Street,
New York City

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Ernest McCleary.....1903-1905
James R. Strong.....1905-1908

Gerry M. Sanborn.....1908-1910
*Marshall L. Barnes.....1910-1912
Ernest Freeman.....1912-1914

John R. Galloway.....1914-1916
Robley S. Stearnes.....1916-1918
W. Creighton Peet.....1918-1920

*Deceased.

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ARCHITECTS AND ENGINEERS

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687 Mission St., San Francisco, Calif.

CODE

A. Penn Denton
17th and Oak Sts., Kansas City, Mo.

CONVENTIONS AND MEETINGS

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526 W. 34th St., New York City

COST DATA

Arthur L. Abbott
3649 Bell Avenue, St. Louis, Mo.

CREDIT AND ACCOUNTING

C. C. Carter
739 Hastings St. W., Vancouver, B. C.

ELECTRAGISTS' DATA BOOK

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STANDARDIZATION

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TRADE POLICY

(Covering Manufacturers, Central Stations,
Jobbers and Merchandising)

W. Creighton Peet

70 East 45th Street, New York City

U. S. CHAMBER OF COMMERCE

L. K. Comstock
21 East 40th Street, New York City

NEXT ANNUAL CONVENTION, WEST BADEN SPRINGS, INDIANA, WEEK OF SEPTEMBER 29, 1924

ALPHADUCT

Non-Metallic, Flexible Conduit

for general house wiring and knob and tube work—the easiest conduit to fish.

AGENCIES:

Broward Sales Co., Atlanta, Ga.
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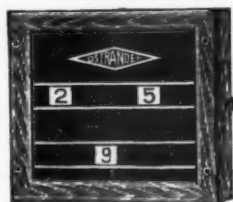


Ben B. Moore, Minneapolis, Minn.
Nicholson Sales Co., Louisville, Ky.
H. B. Squires Co., San Francisco, Cal.
H. B. Squires Co., Los Angeles, Cal.
S. H. Stover Co., Pittsburgh, Pa.
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Strimple & Gillette, Seattle, Wash.
B. K. Sweeney Elec. Co., Denver, Colo.

R. S. Wakefield, Dallas, Texas

ALPHADUCT COMPANY

136 CATOR AVENUE, JERSEY CITY, NEW JERSEY



Gravity Drop



Needle Drop



Target Drop

HOUSE ANNUNCIATORS



ANNUNCIATORS

Our Annunciators have stood the test of over 30 years of exacting service. We also manufacture Hospital, Lamp, Burglar Alarm, and Fire Alarm Types. They are designed to operate on battery or transformer current, and can be supplied with wood or metal cases.

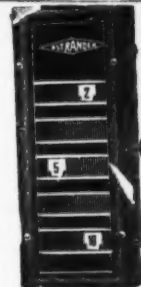
Our Engineering Department is prepared to design any Special Annunciator to comply with your requirements.

W. R. OSTRANDER & CO.

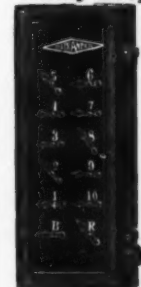
MAIN OFFICE:
371 Broadway,
New York

FACTORY:
83-89 Clifton Place,
Brooklyn, N. Y.

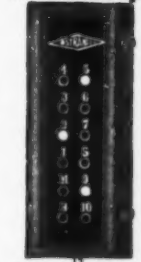
ELEVATOR ANNUNCIATORS



Gravity Drop



Needle Drop



Target Drop

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

Printed Forms

for the use of

Contractor-Dealers

Time Savers—and time is money. These useful forms are printed in large quantities and sold in small lots at the quantity prices; so they also are Money Savers.

Universal Estimate Sheets
Universal Proposal Blanks
Labor Time Cards
Requisitions for Material
Returned Material Sheets
Job Envelopes

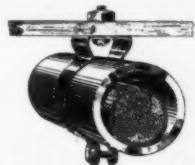
While these printed forms were originally prepared for Association members, and are sold to them practically at cost, they also are supplied to non members at a slight advance over members' prices.

Write Today for Prices

Address:

Association of Electragists
15 West 37th Street
New York City

Minerallac Hangers



These hangers are approved by the Underwriters' Laboratories for use on circuits up to 300 volts, when mounted direct on the surface wired over.

From 300 to 550 volts, spacers are placed under base of hanger or the hanger is mounted on a metal rack or bracket—thus holding the conductor at least one inch distant from wall or ceiling.

For voltages above 550, the Minerallac Porcelain Bushing should be used. Hangers made in seven sizes, $\frac{3}{8}$ to 2½-inch pipe measure.

MINERALLAC ELECTRIC COMPANY

1045 Washington Bl'vd, Chicago



"Notice the lighting" in this auto assembly plant—Appleton Swivel Joints keep the fixtures lined up.



Unilet Swivel Joints allow fixtures to swing through an angle of approximately 15 degrees from the perpendicular.

Insures Perfect Alignment of Lighting Fixtures

Appleton Swivel Fixture Joints and Covers are designed to provide and maintain the perfect alignment of pendant lighting fixtures that adds so much to the general appearance of large factory rooms where the lights are hung in long rows. Lighting engineers also recommend the use of Appleton Swivel Joints and Covers because fixtures must be hung plum if they are to do their part in producing a uniform distribution of light throughout the plant.

ELIMINATES BREAKAGE

The Appleton Swivel Joint allows the fixture to swing in any direction through an angle of at least 15 degrees from the perpendicular. This flexibility prevents damage or breakage when the fixtures are struck by ladders, pipes, boards or moving machinery as they frequently are in every busy plant.

You will find these efficient little fittings fully pictured, described, and priced on pages 156 and 183 of Catalog 9, which lists all Appleton products,—“Unilets,” (one for every wiring need), “Uniduct,” Conduit Clamps and Hangers, Switch Boxes, and the famous “Reelites.”

Catalog 9-D has a pictorial index which is a great help in locating special fittings. If you know what you want, you can easily find it in the pictorial index even though you do not know what to call it.



Unilet Swivel Fixture Joint—When used in conjunction with a Unilet this joint supports the fixture and the Unilet provides a separate wiring chamber for the connections.



Combination Hickey and Swivel Fixture Joint—The hickey feature greatly facilitates wiring.

You may not need Catalog 9-D right now but you undoubtedly will in the near future, so write for a copy today and have it on hand when the emergency arises.

APPLETON ELECTRIC COMPANY
1704 Wellington Avenue,
CHICAGO

APPLETON

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST



On a Vertical Conduit
½ Inch to 2 Inches



On a Horizontal Conduit
½ Inch to 2 Inches

Electrical Contractors Like the “Electrolet” Entrance Fitting, Because:

- It can be used on any kind of entrance, ½-inch to 3 inches.
- It comes assembled; there are no parts to buy separately.
- There are only two screws to be tightened.
- The porcelain is not held on with screws, to be snapped in two at the last twist of the screwdriver.
- It is weatherproof, and has the Underwriters' approval.

Write for booklet

KILLARK ELECTRIC MFG. CO.
3940-48 Easton Avenue
St. Louis, Mo.



On a Vertical Conduit
2½ and 3 Inches



On a Horizontal Conduit
2½ and 3 Inches

Know Where You Stand

By Adopting the New Standard Accounting System

This simple and accurate accounting system is endorsed by practically all of the branches of the electrical industry. It conforms with the accounting systems adopted by other electrical organizations; it is flexible and economical; it is easy to operate, accurate and quick working.

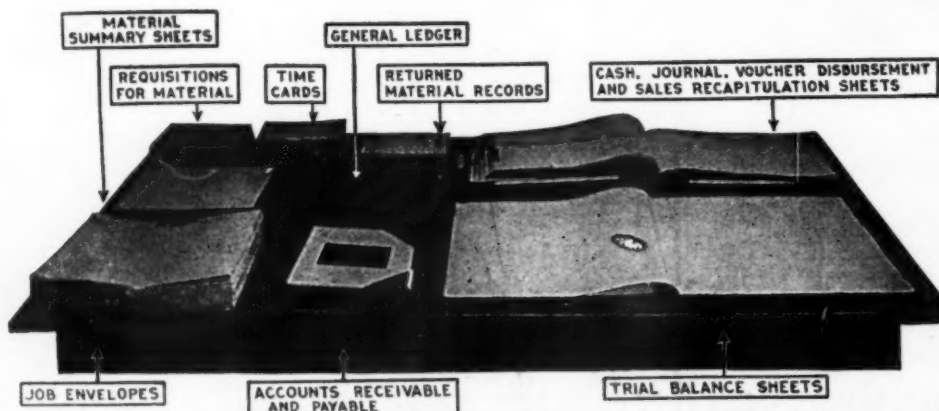
**For Contractors—For Dealers
For Contractor-Dealers**

Adopted and Issued by the

Association of Electragists
INTERNATIONAL

Sold to Members or Non Members

You should always be able to answer these three questions accurately and instantly:



Here is the complete working set, just as it looks, and the whole outfit when spread out for exhibition no more than covers the top of a table.

- (1) Do you know at the end of each month your net profit?
- (2) Do you know that your annual inventory is accurate?
- (3) Can you quickly and accurately make your income tax report from your books?

FULL INFORMATION SENT UPON REQUEST BY THE

ASSOCIATION OF ELECTRAGISTS—INTERNATIONAL
15 West 37th Street, New York City

The New Business Record is recommended to contractor-dealers who do their own bookkeeping.

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST



The Contractor

wants a conduit with clean threads and smooth interiors so that he can install and fish it easily. And for the sake of his customer he wants a conduit protected from rust.

Clifton Conduit

Enameled or Galvanized,

is a practical conduit exactly suited to the contractor's needs. It is made from high-grade steel pipe carefully enameled or galvanized to protect it from corrosion. And the threads are sharp.

Clifton Manufacturing Co.

BOSTON, 61 Brookside Ave. 30
NEW YORK, 26 Cortlandt Street
BUFFALO, 34 Sayre Street
SAN FRANCISCO, 509 Mission Street
CHICAGO, 9 So. Clinton Street
Friction Tape. Splicing Compound.

INSURANCE AT COST

Liability and Automobile

In 1915 the Insurance Committee of the A.E.I. investigated and recommended this insurance organization to the membership of the Association.

All through the eight years that have passed since 1915 the relations thus established have been closely maintained until Lynton T. Block & Company is known to every Electragerist.

The advantages, both in Protection, Service and Savings, that are afforded through the Merit Saving Plan of Insurance are well worth consideration by every member, as they have the unqualified endorsement of the Insurance Committee of the A.E.I. year after year.

Remember, this is one of the benefits of membership.
For complete information address

LYNTON T. BLOCK & CO.,

UNDERWRITERS, INC.
Reduced Cost Insurance for Special Classes
ST. LOUIS, MO.



Which one will be the Cheapest in the End?

Lay half a dozen renewable fuses in front of you. They all look more or less alike. And they cost about the same.

The one big, outstanding difference is in the number of blowouts each will withstand. The real cost of a renewable fuse is the cost per blowout.

A \$2.80 fuse that can be blown only twice costs \$1.45 per blowout, against 22 cents per blowout for a "Union" Fuse that will withstand 24 blowouts. That's a saving of \$29.64, for you'll use but one "Union" Fuse and 23 links instead of 12 fuses and 12 links of the other kind during the same time.

Stop and figure what you could save in this way in a year by using

'UNION' RENEWABLE FUSES

We know, positively, that "Union" Renewable Fuses will take more punishment than any other make. And we are willing to stand the cost of convincing you of the truth of this statement.

So, if you will test one "Union" and any other three makes under the same conditions, and keep a record of the blowouts each will withstand, we will send you the cost of all four fuses if the "Union" does not endure the greatest number of blowouts and prove superior in every way.

It is a demonstrated fact that

"The 'Union' saves more than ANY other renewable fuse."

Both renewable and non-renewable types sold by electrical jobbers and dealers.

Catalog sent on request.

CHICAGO FUSE MFG. CO.

Manufacturers also of Switch and Outlet Boxes, Cut-out Boxes, Fuse Plugs, Fuse Wire and Automobile Fuses.
CHICAGO NEW YORK



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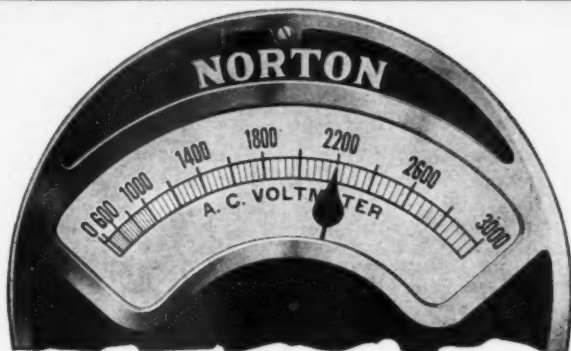
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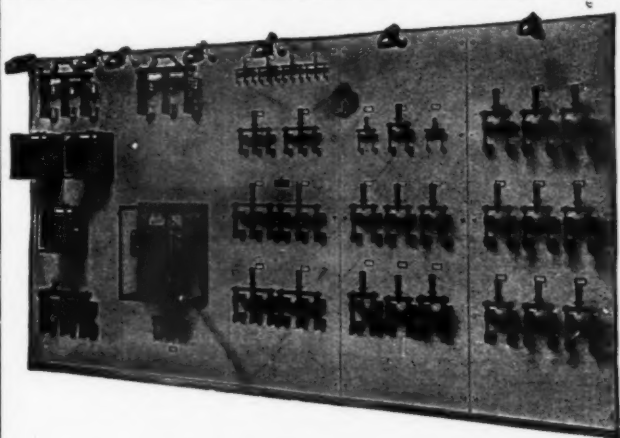
Ammeters and Voltmeters with Transformers

A small deflection of the pointer over the scale of these instruments represents a large number of volts or amperes, since instruments with transformers are usually used in circuits where there is a high voltage or a large amount of current. It is essential therefore that instruments of extreme accuracy be used in connection with transformers to measure the power in the circuit.

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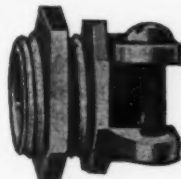
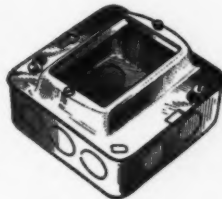
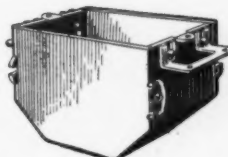
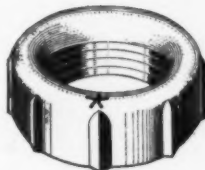
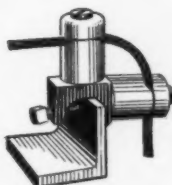
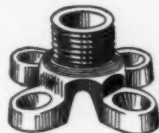


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**National Electrical Code Standard
Intermediate (Red) Thirty Per Cent**

Wire built under the direct supervision of experienced engineers, skillfully and honestly manufactured with one purpose and result.

Continuous Service

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BARD-PARKER Wire Insulation Stripper (WOOD PATENT)



No. 1 TOOL
Regularly Equipped with 3
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single hole blades for any
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supplied when specified.

**CAN
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1200
ENDS
AN
HOUR**

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Fast and Cheap. Costs 10c
plus 5 minutes' time to in-
stall box. In Lots of 200
8 1/2 cents.

JOB BERS!

Eventually you will add this staple, fast selling article to your stock as the contractors will not be without these time and money saving strips. No doubt many of your customers are using them now. Have your salesmen investigate and see if this is not true.

CONTRACTORS AND DEALERS!

Kruse Strips are made of sheet metal, so they may be cut the desired length with your snips. Made 18" long. A hammer, four nails and three minutes' time is all you need to install a box or a gang of them.



THEY SAVE YOU MONEY

THE OLD WAY
Slow and Expensive. Costs
50c to 75c to install box.

**10¢
plus
5
minutes**

A card will bring a
sample set, or \$1.00
will bring twelve
(12) sets by prepaid
parcel post.

**MIDWEST
METAL
PRODUCTS
COMPANY**

Munice, Indiana

We Manufacture:—

**Rubber Covered Wire—Solid Conductor,
Stranded Conductor, Flexible Conductor.
Extra Flexible Conductor.**

**Lamp Cords, Reinforced Cords, Heater
Cord, Brewery Cord, Canvasite Cord, Packing-
house Cord.**

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Cable, Flexible Armored Cable.**

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Cable, Elevator Annunciator Cable.**

**Switchboard Cables, Telephone Wire,
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**Automobile Ignition Cables, Automobile
Lighting Cables, Automobile Starting Cables,
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Moving Picture Machine Cable.

Boston Insulated Wire & Cable Co

**Main Office and Factory:
Dorchester District
Boston, Mass.**

**Canadian Branch
Office and Factory:
Hamilton, Ont.**

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST



*March winds—
April showers—
Soon will come
hot still days!*



Lose no time now on your 1924 Fan Campaign

Westinghouse has prepared a campaign which will enable the dealers who use it to bite deep into the 1924 fan market. If you have not already been visited, our representative will soon call on you to submit the details.

The first hot day is not far off. When it comes, be ready with a campaign that is fresh and appealing with originality, one that gives really tangible talking points on the positive qualities of the fan you wish to sell.

Westinghouse Electric & Manufacturing Company
Newark Works, Newark, New Jersey
Sales Offices in All Principal Cities of the United States and Foreign Countries.

Westinghouse

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST



Let Them Time the Tumbler Heater!

Put on a real demonstration for your customers. Let them see for themselves how quickly the Tumbler Heater brings a glassful of water to boiling. It's only a matter of a few minutes.

Then let the customer lift it out of the water and see how it is almost impossible not to turn off the current with the same movement!

The Westinghouse Tumbler Heater sells itself because it is so quick—so safe—so simple and so useful. Dentists, doctors, everybody will want it for use in their business or home.

Get a stock from our nearest jobber and let it sell itself for you!



Westinghouse Electric & Manufacturing Company
Mansfield Works, Mansfield, Ohio

Sales Offices in All Principal Cities of the United States and Foreign Countries.

Westinghouse

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

Here are the Selling Points of Shurvent Renewable Fuses

The drop-out type of link not only allows the minimum amount of metal to fuse, but it also assures instantaneous opening of the circuit under the most severe conditions. This design causes the least wear and strain on the fuse.

The positive method of venting prevents the fuse from bulging or burning on severe short circuits.

The ferrules will not freeze on the casing, because very little molten metal or gas passes along the threads.

Long life of the casing is assured by a specially designed, extremely strong, bone-fibre tubing.

A minimum number of parts is combined with the maximum simplicity in the renewal of links. This makes the fuse easy to renew and lessens the possibility of losing parts that would make the fuse inoperative.

There are no leather or cotton washers to burn or to be replaced.

A request from you will bring a booklet showing the complete line of Westinghouse fuses.



Westinghouse Electric & Manufacturing Company

Merchandising Department,

East Pittsburgh, Pa.

Sales Offices in All Principal Cities of the United States and Foreign Countries.

Westinghouse



NEW!

Perfect Safety to Customer while Replacing Fuses

Sell the New Westinghouse Safelock Switch

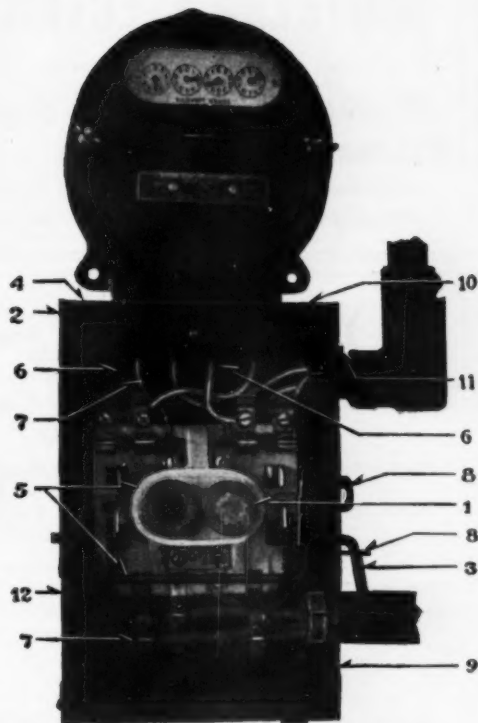
This new Westinghouse meter service switch is, as the name implies, a safeguard against electrical shocks and burns which consumers have sometimes suffered while attempting to replace their fuses. With the use of the "Safelock," consumers cannot possibly touch live parts while they are renewing fuses or operating the switch.

But this is not the only feature. Theft of current from the Public Utilities in the United States averages about 8 per cent. of their capacities and amounts to millions of dollars annually. The prevention of this enormous loss creates a wonderful market for the Westinghouse WK-64 "Safelock" Meter Entrance Switch.

The construction conforms to standardization and all accessories are interchangeable with those of other leading manufacturers. Read carefully the "Fourteen Points" enumerated on the right. The switch has been passed by Underwriters under classification "A."

Our staff of safety switch engineers will be glad to assist you in your safety switch problems. Write our nearest office or jobber for descriptive leaflet No. 20130.

Westinghouse Electric & Manufacturing Company
Mansfield Works Mansfield, Ohio
Sales Offices in all Principal Cities of the United States and Foreign Countries.



- 1 Customer replaces fuses in perfect safety
- 2 Tamper proof
- 3 Externally operated
- 4 Standardized end walls and meter trims
- 5 Fuse compartment so interlocked with operating handle that door cannot be opened until switch is in the "OFF" position
- 6 Sufficient combination knock-outs conveniently located
- 7 Adequate wiring space
- 8 Can be locked in "ON" or "OFF" position
- 9 U shaped slide permits trough for banking switches
- 10 Side type sealing arrangement
- 11 Grounding lugs
- 12 Durable construction assures lasting service
- 13 Permits safer meter testing by authorized persons without interruption of service
- 14 Provided with card holder

Westinghouse

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

"Buy Electrical Supplies from Electrical Supply Jobbers"

QUICK REFERENCE LIST for the Convenient Use of Contractor-Dealers, in which Electrical Supply Jobbers in various Sections invite Your Patronage

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Electrical and Radio Supplies

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Distributors for General Electric Company, Radio Corporation of America, and other large and reputable manufacturers.

JOBBERS!

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HIGHEST GRADE OF ELECTRICAL MATERIALS

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READY REFERENCE LIST of Lighting Fixture Manufacturers for the convenience of Electrical Contractor-Dealers.

We would like to show you how easy it is to get the profits from the industrial lighting field and how easy it is to keep them coming your way. Write our nearest district office or direct.

WESTINGHOUSE ELECTRIC & MFG. CO.
GEORGE CUTTER WORKS, SOUTH BEND, IND.



Shapiro & Aronson, Inc.

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Build your business with S. & A. Standardized Lighting Fixtures in Standardized Finishes. They combine the "made-to-order" look with prices rivaling those offered on ordinary "ready-made" fixtures.

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—a grouping of—

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INTERNATIONAL

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15 West 37th Street, New York



A complete line of
Adjustable Electric

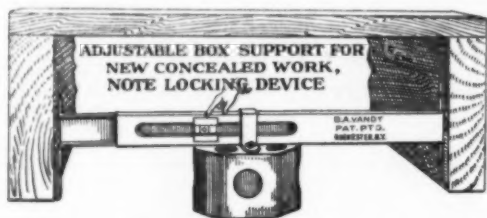
Brackets, Portables and Metal Shades
VERDELITE PORTABLES

Catalog No. 30

Prompt shipments from a complete stock of Original, Artistic and Economical Fixture Trimmings, Gas Electric and Combination Brass Fittings, Stampings, Spinnings, Castings and Parts for Fixture Manufacturers and Dealers.
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DECATUR, ILLINOIS

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FOUR NAILS AND A HAMMER SETS
THE BOX ALLOWING FOR LATH
AND PLASTER.

ANY MAKE OF BOX CAN BE USED.

Our "ALL IN ONE" Covers are something new and saves
carrying a variety of covers in stock.

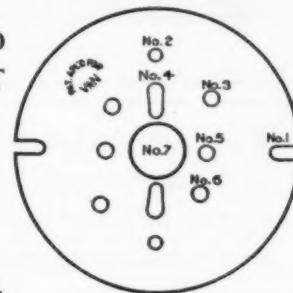
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YOU WHY HIS FITTINGS COST
YOU NOTHING.

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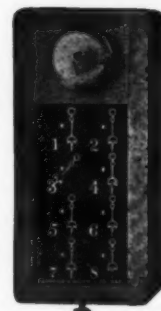
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Established 1867

51 N. Seventh Street,

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*Our Annunciators and House Goods in Stock
and for Sale by Dealers Everywhere*



Americore RUBBER-COVERED Wire

for interior wiring

All sizes and voltages.

Thoroughly reliable. Safe.

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Illustrated catalogue—free.

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NEW YORK

Company

IF you KNEW you could make a neat
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YAGER'S Soldering Paste-Salts;

That each is a fully guaranteed flux for
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Then—

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DOLPHIN, Code; TRITON, Intermediate Grade 25% Para; and NEPTUNE, 30% Para; are three widely known and extensively used Atlantic Wires.

If you want to build or hold a reputation for quality work, see that "Atlantic" goes in the job.

Price lists and discounts upon request.

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Here is a vise stand and pipe bender you can move about and erect in a jiffy wherever you want it. It saves time and labor, making it unnecessary to run back and forth to a stationary vise.



The Martin portable vise stand and pipe bender stands rigidly anywhere, without fastening. Use it for cutting, bending and threading pipe, conduit, etc. It will handle practically any work that can be done on stationary equipment.



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Every Thing from Generator to Lamp

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Write for our vestpocket telephone directory.

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ENAMELED MAGNET WIRE
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We also manufacture Weatherproof, Slow Burning, Annunciator, Office and Magnet Wires and Cables
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 Annunciators and Push Buttons "Daisy" Floor Treads

The Ansonia Electrical Company, Ansonia, Conn., U. S. A.

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FANS



If you are looking for a bigger Fan year, look first for a Fan that is backed by a National Sales Campaign.

—And let it be a Fan with a NAME and a reputation for honest worth.

We are with you to supply your demand **promptly**—and the demand will be BIG!

Get busy now.

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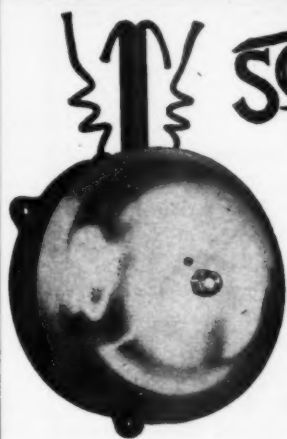
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Vibrating Cyclone Bell

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Type No. 62 For Direct Current

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For operation on 250 volts or less Alternating and Direct Current.

Has all terminals and current-carrying parts heavily insulated from frame and securely inclosed in metal case. For multiple operation only.

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A MARK OF QUALITY

Buy Conduit Fittings by this mark. They are better than others and cost no more.

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Insulated wire and cable for every transmission purpose—not made to meet a price, but with the idea of rendering maximum service to the purchaser and of reflecting maximum credit to the contractor who uses it.

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RUBBER COVERED WIRES AND CABLES

The Standard for THIRTY-THREE Years



For all purposes. Inside, Outside, Aerial, Underground and Submarine Use.

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NOARK fuses blow
on the dot
NOT TOO SOON — NOT TOO LATE

*A good way to turn
a customer into an
ex-customer is to sell
him a cheap fuse that
"may" work properly
Play it safe — Noark
is the way*

THE JOHNS-PRATT COMPANY, 160 Huyshope Ave., Hartford, Conn.
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6820-13

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has the ability
and capacity
to serve you
in NINE ways



1

NOARK Fuses



2

NOARK Fuse Clips and
Bases



3

NOARK Service and Sub-
way Boxes



4

ALL-SAFE Switches



5

NOARK Universal Service
Entrance Switches



6

Railway and mine mater-
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7

J-P molding service — con-
tract basis



8

VULCABESTON Packing
— sheet, rope, braided



9

J-P molded radio parts —
from stock



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You Can't Sell any Kind of Merchandise Unless you tell the Public About It!



"DO IT ELECTRICALLY"

THE bigger the man—the more he is inclined to let others help him. And it goes without saying that the *big* man is making *big* money!

In the electrical industry this fact is proved in a multitude of cases. The successful, progressive electragist realizes that there is a vast fund of information pertaining to his business procurable at the headquarters of certain national electrical organizations.

For instance, members of The Society for Electrical Development have lately received three hard-hitting Sales Helps on the retailing of Radio, Electric Cleaners and Table Socket Appliances. These are in the form of standard booklets, containing on an average 64 pages, liberally illustrated and representing literally the A-B-C of effective selling and advertising of these items of electrical merchandise.

Consider that the sales plans, data and other helpful material given in the three Sales Helps cited are taken from **CURRENT RECORDS** and are strictly applicable to your conditions and present-day needs—

—and that additional S. E. D. Sales Helps are in various stages of preparation for the purpose of helping progressive Electragists in other, equally vital sales campaigns!

Numerous other Sales Helps, recently prepared, covering a wide range of business-building, profit-making phases of Electragists' activities are available to all S. E. D. members.

Can you not utilize such Sales Helps to Profit and Advantage? Prove your faith and interest in the wonderful industry of which you are a part by investigating the Reduced Cost Membership Plan in effect between your organization, The Association of Electragists—International, and The Society for Electrical Development, Inc.

SAVE TIME AND EFFORT—FILL OUT THE COUPON!

(In writing for information, mention "THE ELECTRAGIST").

Association of the Electragists, (International)
15 West 37th Street, New York, N. Y.

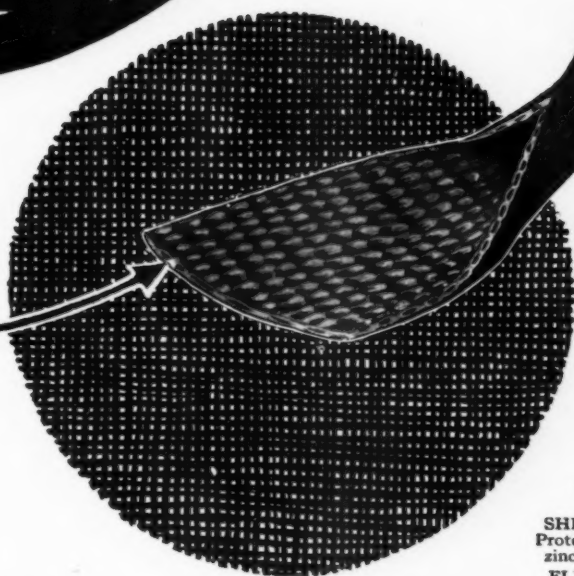
Gentlemen:

I am interested in learning full details about the joint-membership plan with The Society for Electrical Development, Inc., and the extremely low rates prevailing for **ELECTRAGISTS**.

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Street & No. _____ City _____ State _____

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*Here's Why
Flextube fishes
so easy*



EVERY little "roller" in the tough, solid wall of FLEXTUBE is an individual glider—hundreds of them to speed the wire along.

The wire fairly skates over this continuous non-friction surface. No hitch, no hesitation. FLEXTUBE makes wiremen wonder, if they have never installed it before, where they ever heard "it's a hard job to fish non-metallic conduit."

You take away all the trouble, and nine-tenths of the "push and pull," when you install FLEXTUBE. It is the Non-Metallic Conduit that has taken every last kink out of fishing.

Just see that you get FLEXTUBE on your next order calling for non-metallic conduit. You will thank yourself sincerely on the very first job you fish.

National Metal Molding Company



WORLD'S LARGEST PRODUCERS OF ELECTRICAL
CONDUITS AND FITTINGS

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Represented in All Principal Cities



[4]

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NATIONAL RIGID CONDUIT
For high grade wiring

SHERARDUCT
Protected by both
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ECONOMY
Protected by
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FLEXSTEEL ARMORED CABLE and
FLEXIBLE METAL CONDUIT
For high class work at minimum cost

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For 600 volts or less

LIBERTY AUTOMOBILE WIRE
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For the electrical circuits of motor vehicles

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JUNIOR SWITCHES

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SAFETY SWITCHES

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Install "BULL DOG" Safety Switches—Positive Quick Make as well as Quick Break—and be sure that they cannot be accidentally operated.

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Investigate the "BULL DOG" carefully. Compare it point by point with any other switch on the market. You will convince yourself that here is a switch you can recommend and stand behind.

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